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# City of Bradbury GENERAL PLAN

Prepared by



DAVID EVANS AND ASSOCIATES, INC.



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## BRADBURY GENERAL PLAN

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Prepared for:

*The City of Bradbury*  
600 Winston Avenue  
Bradbury, California 91010  
Contact: Keene Wilson, City Manager

Prepared by:

*David Evans and Associates, Inc.*  
1000 East Garvey Avenue South, Suite 250  
West Covina, California 91790  
(818) 919-6400  
Contact: Marc Blodgett

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# Introduction







# SECTION 1: INTRODUCTION TO THE CITY OF BRADBURY GENERAL PLAN

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## PURPOSE OF THE BRADBURY GENERAL PLAN

The City of Bradbury General Plan is a comprehensive, long-range plan which will serve as a guide for planning through this century on into the next. This General Plan consists of an integrated and internally consistent set of community goals and plans which focus on those issues of both immediate concern to the community and those that are likely to need consideration in future long-range planning.

The City of Bradbury General Plan is in compliance with Section 65302 of the California Government Code which provides the legal basis for the Plan's preparation and implementation. The City's General Plan contains seven sections or *elements* in accordance with State planning law. These elements include:

- **Land Use Element.** The Land Use Element designates the general location, distribution, and extent of the various existing and permitted land uses. The Element also indicates standards for population density and development intensities for the residential land use categories. Finally, the Land Use Element indicates those constraints that will need to be considered in future land use planning.
- **Housing Element.** The Housing Element identifies the existing and projected housing needs for the City and establishes appropriate policies, objectives, and programs that focus on the preservation, improvement, and development of housing.
- **Conservation Element.** The Conservation Element establishes policies related to the conservation, development, and use of natural resources in the City. The Element's focus is on water conservation, scenic resources, ecological resources, and cultural resources in the City.
- **Open Space Element.** The Open Space Element contains plans and measures related to the remaining open space presently found in the City.
- **Noise Element.** The Noise Element examines the existing and future noise environment in the City. The Noise Element promotes policies which will maintain the quiet rural atmosphere of the community.
- **Safety Element.** The Safety Element establishes standards and plans that focus on the protection of the community from a variety of hazards including earthquake, flood, and wildfire hazards.
- **Circulation Element.** The Circulation Element indicates the general location and the extent of the existing roadways, highways, and public utilities and established standards for these roadways.



Together, the seven Elements clearly articulate the community's vision for the long term development of the City. The Plan also incorporates the regional Air Quality Plan and the Source Reduction and Solid Waste Element by reference. This General Plan, in essence, serves as the *Constitution* for the City of Bradbury.

Each element is comprised of three sections. The first section presents a brief overview and introduction to the element. The second section describes the existing conditions in the City. Finally, the third section includes a "plan" which is responsive to both the issues raised in the background research and community's desires.

## BACKGROUND OF PLANNING

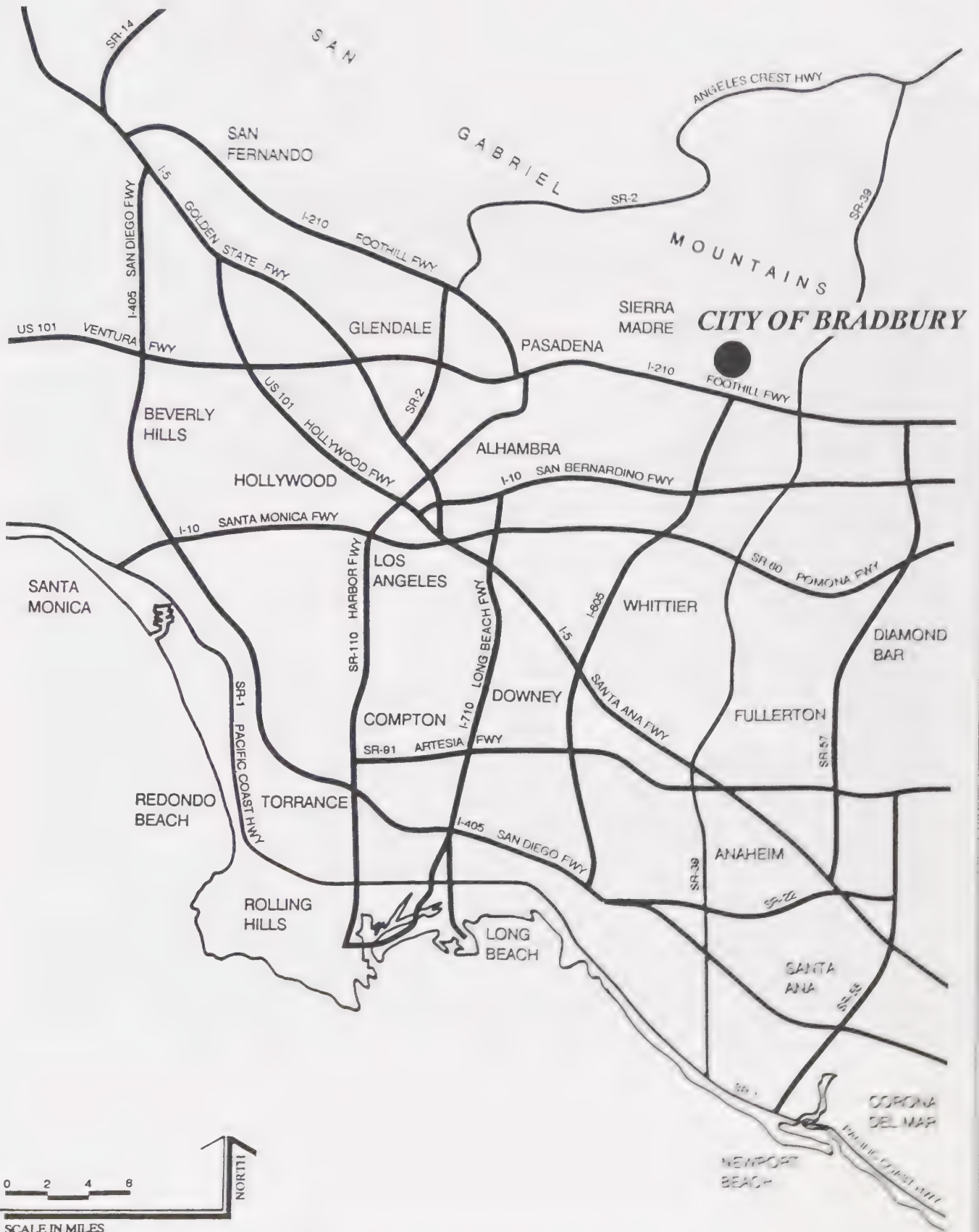
The City of Bradbury, incorporated on July 26, 1957 in order to preserve the rural character of the land, consists of a beautiful, two square mile, uplifted plateau, with Live Oak tree-lined canyons along the southerly face of the San Gabriel Mountains. The City boundaries lie within the northern part of the Rancho Azusa de Duarte which extended from the San Gabriel River on the east to Monrovia on the west. The land was developed and subdivided in the late 1800's by later owners from Alexander Weil, to William Wolfskill who planted the first commercial orange and citrus groves in California, and to the Bradbury Family, the Meyers, the John Scott Family, the Fowler Family, the Spinks Family, the Fitzgerald family, and other early residents all of whom loved the beauty of this bountiful area. These early residents planned to maintain the area as a rural community of ranches and large homesteads, free from the usual cramped developments lining many of the hillsides in Southern California. The City commands a magnificent view of the San Gabriel Mountains and valley, from Covina to La Canada, and south to Long Beach and Catalina, which can be seen in the distance during crystal clear days common in the fall and winter. Exhibits 1-1 and 1-2 depict the City's location in a regional and local context.

These early residents soon discovered the unique characteristics of the soil, water and the warmth of the foothill thermal belt, permitting the growing of the finest citrus and avocados anywhere in the world. Important varieties of plants were developed or introduced in this area. These plants include the Meyer Lemon, the Fuerte and Bacon Avocados, the Improved Washington Navel Orange, the Gast Hibiscus, the Cycads and the Deodar.

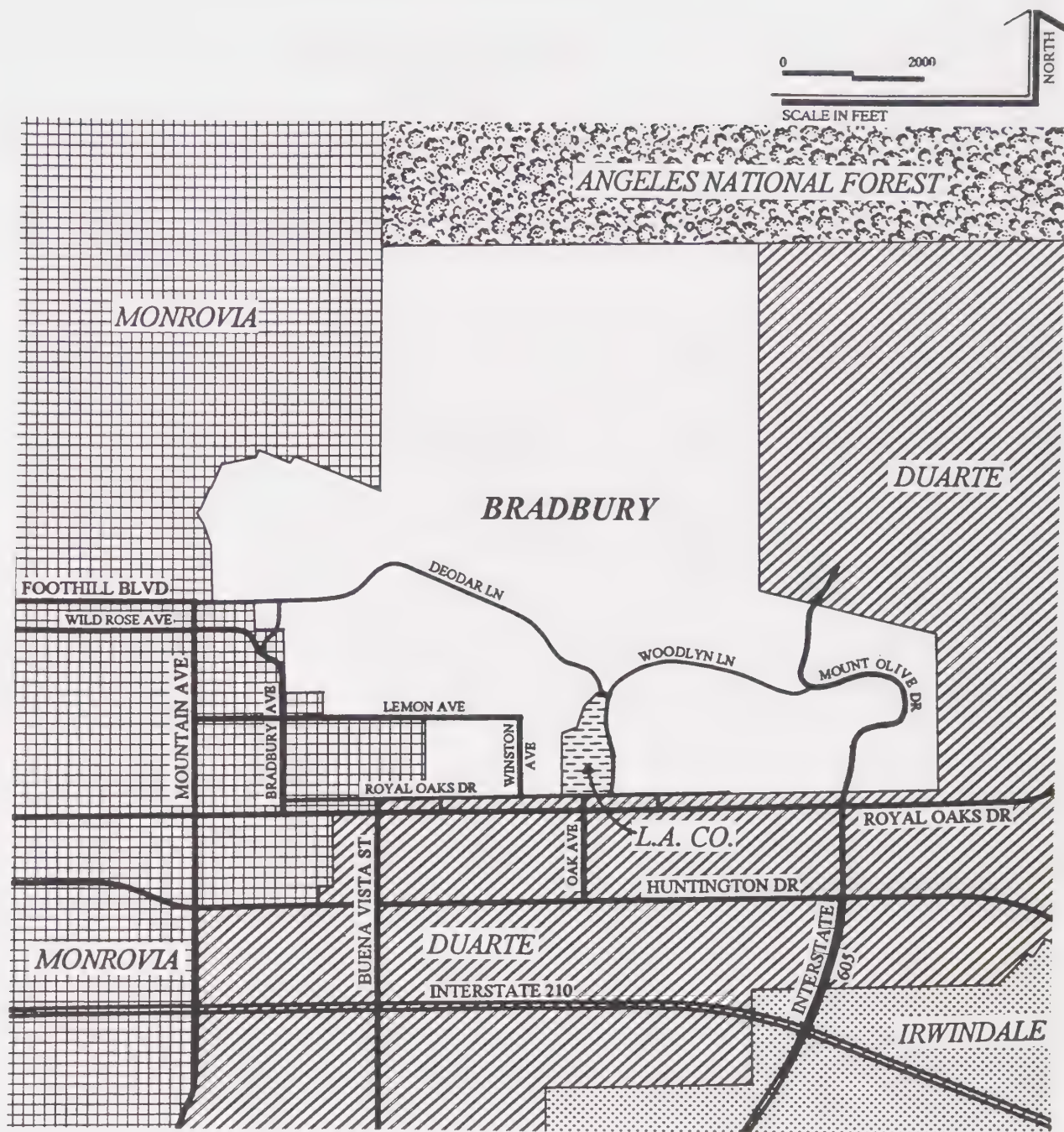
The first Bradbury City Council members were Rollin Eckis, Jack Martin Roth, Arthur W. Beaucaire, Cliff Poindexter, and E.M. Mazzei. Rollin Eckis, a highly respected research geologist, was elected Mayor. Eckis had published the most comprehensive analyses of the geology and ground water which remain today as the most definitive technical references for this region.

Eckis described this region as a Pleistocene-age uplifted plateau lying between the east-west trending Sierra Madre Fault Zone on the north and the inactive Duarte Fault Zone on the south, forming a ground water barrier, and creating a highly fertile region with a warm Mediterranean













climate. Rocks in the area range from the highly fractured, light-colored granites and decomposed granites in the north, to metamorphic rocks of the middle-Miocene Topanga Formation, then to the Duarte Conglomerates and alluvial sediments of the Eckis San Dimas Formation in the south. The plateau is truncated about a mile to the west by the north-east trending Raymond Hill, Clamshell and Sawpit Canyon Faults slicing across the Sierra Madre Fault in Monrovia Canyon, and on the east by a series of ancient fault zones in Fish Canyon and San Gabriel Canyon. These old faults and the massive Mt. Wilson diorite basement rocks should provide a relatively safer haven for homes and people than softer alluvial areas near the San Gabriel River.

Since incorporation, the population has grown from 518 to about 890, living in about 280 homes. The City is divided into five Councilmanic districts. Local control of development has been proved essential for preservation of this unique community. Development by outside interests in adjoining cities at times has been somewhat detrimental to the rural environment, due to excessive grading, reduction in lot sizes, and construction of buildings out of character with the surrounding residences. In keeping with the ideals of Louis Bradbury, and other early residents, Bradbury has been kept as a single-family, residential community, allowing no commercial development, or multiple-family units or condominiums. About a third of the streets are private, with gated and controlled access to Woodlyn and Deodar Lanes. It has become famous for its peaceful life, for its beautiful race horse farms, and for its role in the early development of horticulture. The City includes the Royal Oaks Elementary School. The old Bradbury homestead was developed as the Royal Oaks Manor, an elegant retirement community operated by the Presbyterian Church on an 18 acre parcel of County land in the City's sphere of influence.

## GENERAL PLAN POLICY

The public played a vital role in both the preparation and implementation phases of the General Plan. As a result, the General Plan reflects goals and objectives of the community at large through the efforts of the General Plan Advisory Committee, as well as from input obtained through a community-wide survey.

The City conducted a City-wide survey as part of the preparation of this General Plan. The questionnaire asked residents questions concerning the community's desire regarding the nature and character of future development as well as specific issues that were of concern. The response rate was relatively high with 46 percent. A number of key observations emerged from the community survey:

- 96 percent of the respondents indicated they *were satisfied* with the semi-rural character of the City.
- 65 percent of the respondents indicated they *would like* to see change in the City though 89 percent of this figure said they wanted the City to be *more rural*.

- 95 percent of the respondents indicated they *did not* support new commercial development in the City.
- 73 percent of the respondents felt the City *did not* need a new park and the majority did not see a need to develop a trail system.
- 83 percent of the respondents said they *were satisfied* with the streets in the City and 85 percent indicated sidewalks *were not* necessary.
- The residents cited the things they *liked most* about Bradbury, including the exclusively residential character of the City, the *lack of traffic*, *lack of noise*, the *rural character*, and the *natural habitat* remaining in many areas of the City.

The community's vision was further enhanced with the formation of a General Plan Advisory Committee. The General Plan Advisory Committee framed a series of community objectives and supporting policies that provided the framework for the City of Bradbury General Plan. Objectives and policies were developed for each element.

- *The objective of the Land Use Element is to maintain the existing character of the community and to preserve those environmental resources and amenities that make the City of Bradbury a desirable place to live.*

**Land Use Element Policy:** The residential character of the community and those environmental resources important to the City will be maintained.

- *The objective of the Housing Element is to maintain the existing residential character of the community while providing for the housing needs of the City residents.*

**Housing Element Policy 1:** The City will promote and cooperate in the enforcement of fair housing laws.

**Housing Element Policy 2:** The City will continue to permit the development of a variety of housing types and to designate sites for new residential development in the General Plan.

**Housing Element Policy 3:** The City will pursue opportunities to provide housing for low and moderate income households.

**Housing Element Policy 4:** The City will continue to work to remove those governmental constraints that limit or discourage the development of new housing in the City.



**Housing Element Policy 5:** The City will work to conserve and improve the existing housing (including affordable housing) in the City.

**Housing Element Policy 6:** The City will promote and encourage public participation.

- *The objective of the Open Space Element is to maintain the rural character of the community and to maximize the remaining open space resources.*

**Open Space Element Policy:** The preservation of the existing natural open space resources in the community will be emphasized, where appropriate, through the implementation of the General Plan.

- *The objective of the Conservation Element is to preserve those resources that are important to the community and to cooperate in regional efforts to improve environmental quality throughout the region.*

**Conservation Element Policy:** Existing and future development will be sensitive to those natural resources found in the City and in maintaining those natural resources.

- *The objective of the Noise element is to maintain a quiet and noise-free environment in the City.*

**Noise Element Policy:** The City will strive to maintain its quiet and noise free environment.

- *The objective of the Safety Element is to enable the City to be sensitive to natural and manmade hazards in future decision-making for future planning efforts.*

**Safety Element Policy:** Public safety will be the focus of the City's comprehensive emergency preparedness plan which will emphasize wildfire hazards, seismic risk, and a range of other manmade and natural hazards.

- *The objective of the Circulation Element is to accommodate existing traffic (equestrians, pedestrians, and vehicles) in a manner that is both safe and sensitive to the City's unique character.*

**Circulation Element Policy:** All public roadways and roadway improvements will be constructed to City of Bradbury local street standards so as to preserve the residential character of the City.



## Land Use Element







## SECTION 2: CITY OF BRADBURY LAND USE ELEMENT

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### INTRODUCTION TO THE LAND USE ELEMENT

The Land Use Element serves as the foundation for the City of Bradbury General Plan and is the most important of all elements. The purpose of the Land Use Element is to establish policy governing the future land uses in the City. State law requires that the General Plan be consistent with the Zoning Ordinance since it is the primary implementation tool for the Land Use Element.

In 1972, the City adopted a General Plan which was intended to be a long-range guide for the City's growth through the year 1990. As conditions have changed over the past 20 years, it became increasingly apparent that the City's Land Use Element was in need of providing updated policy direction to accommodate future development within the community into the 21st Century. The City Council has also requested that the updated Element provide the level of detail to ensure consistency between the General Plan and Zoning Ordinance.

All city and county general plans are required by State law to have a land use element. The Government Code, specifically Section 65302(a), requires that land use elements:

*"...designate the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land. The land use element shall include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan..."*

The City is predominantly a residential community with no land set aside for commercial and industrial development. Virtually the lower two-thirds of the City has been subdivided with the remaining one-third of the City to the north consisting of hillsides located at the base of the San Gabriel mountains. Those areas of the City developed as residential typically consist of lots ranging in size between one and five acres. Development densities in these areas are low largely because of the topography, lack of infrastructure, and other development constraints.

The City-wide questionnaire completed as part of this General Plan, indicated there was an overwhelming preference for maintaining the existing character of the City. The residents overwhelmingly supported (96 percent) the lower density, rural character of development. In addition, 95 percent of the respondents indicated they were opposed to any commercial development in the City. Finally, 73 percent of the respondents felt that the City did not need a park. In response to the overall community vision regarding land use, the following objective serves as the cornerstone for the Land Use Element.

*The objective of the Land Use Element is to maintain the existing character of the community and to preserve those environmental resources and amenities that make the City of Bradbury a desirable place to live.*

## OVERVIEW OF LAND USE ELEMENT ISSUES

### *Distribution of Existing Land Uses*

As indicated previously, the City is developed primarily as residential with other land uses consisting of open space and miscellaneous public uses. The City of Bradbury is 1.99 square miles in size. According to the 1990 Census, the City of Bradbury had a population of 832 persons residing in 287 housing units. The most current Department of Finance estimates (1993) place the City's current population at 850 persons and the number of housing units at 281 units.

Residential development in the City of Bradbury is more dense in the southern portion of the City, along Royal Oaks Drive, and less dense in the northern portion of the City. This trend is a reflection of the substantial differences in topography in the City. The southern, relatively flat, portion of the City has a band of residential units that vary from one-acre lots to 7,500-square-foot lots. Lot sizes get increasingly larger as you go north into the hilly and mountainous areas. Other uses in the City are limited to the 1.3-acre Civic Center and the Royal Oaks Elementary School (consisting of 13 acres). The unincorporated area, along Royal Oaks Drive, in the center of the City is a senior housing development, located in Los Angeles County.

Table 2-1 and Exhibit 2-1 indicate the distribution of existing land uses in the City. For purposes of analysis, the residential uses have been placed into categories of lot size which correspond to the Zoning Ordinance designations. The residential uses illustrated in Exhibit 2-1 and summarized in Table 2-1 include the following:

**Estate Residential - five acres.** This category refers to larger lot development on parcels of at least five acres in size. The majority of these lots are located in the northcentral and northwestern portion of the City and correspond to those lots zoned A-5.

**Estate Residential - two acres.** Residential development included in this category corresponds to the central portion of the City where units are located on two-acre lots.

**Estate Residential - one acre.** This category refers to those areas in the southern portion of the City that have been developed as residential on one-acre lots.

**Single-Family - 20,000 square feet.** This category applies to those residential areas located on lots with a minimum square footage of 20,000 square feet. Two areas of the City have been subdivided into 20,000 square-foot lots. The first area is located east of and along









Braewood Drive. The second area is located in the southeast portion of the City along Fairlee Avenue, Gardi Street, Oak Shade Road, and Spring Point Drive.

**Single-Family - 7,500 square feet.** One neighborhood is categorized as single-family located on 7,500 square foot lots. This area is located in the southeastern corner of the City along Elda Street, Freeborn Street, and Gardi Street.

One school, the Royal Oaks Elementary School, is located within the corporate boundaries. The school occupies a 13-acre site located at the extreme southeast corner of the City. This school is operated by the Duarte School District.

The City's Administrative Complex is located at 600 Winston Avenue and the entire 1.13-acre site is reserved for public use. The Civic Center is a remodeled house that includes offices and a meeting room. The Civic Center site occupies a 1.3-acre site east of Winston Avenue in the southcentral portion of the City.

As indicated previously, a substantial portion of the City remains undeveloped. The northernmost one-third of the City roughly north of a line crossing the Bradbury Debris Basin, is undeveloped. The topography is varied in this area and is bisected by numerous intermittent streams. A second area that is undeveloped is located between the Bradbury Debris Basin and the Spinks Canyon Debris Basin. This area is maintained by the Los Angeles County Flood Control District. Finally, a third open space area is located south of Bradbury Hills Road and corresponds to the fault scarp in this area.

TABLE 2-1 DISTRIBUTION OF EXISTING LAND USES			
Existing Land Use	Corresponding Zone	Area	
		Acres	Percent
Estate - 5 acre	Single-family 5 acre lots	568	39
Estate - 2 acre	Single-family 2 acre lots	196	14
Estate - 1 acre	Single-family 1 acre lots	113	8
Single-Family 20,000 s.f.	Single-family 20,000 s.f. lots	41	3
Single-Family 7,500 s.f.	Single-family 7,500 s.f. lots	20	1
Public	School-Civic Center	17	1
Vacant	Flood Control, undeveloped	320	22
Roads - Easements		165	11
Source: David Evans and Associates, Inc. 1993.			

The City does not have a public trails system. The Royal Oaks Trail, in the City of Duarte, extends along the City's southern boundary. Private trails are located throughout the northern portion of the City.

## LAND USE PLAN

### *Land Use Standards*

The City of Bradbury Land Use Map reflects the Community's long-range objectives regarding future land uses and development. The land use plan reflects the existing development within the City as well as standards for development included in the Zoning Ordinance. Classifications depicted on the proposed Land Use Map of the General Plan are described below. The General Plan designations serve as the framework to guide future development. Precise standards and procedures are further defined in the City's Zoning Ordinance.

**Estate - Five Acres.** This land use category is characterized by single-family residential development on larger lots. The permitted density within this zone ranges from one dwelling unit per five acres and up. These areas are primarily located in the northern part of the community. The corresponding zone district is A-5 (Agricultural - Five Acres).

**Estate - Two Acres.** The Estate - two acres designation is characterized by single-family residential uses on lots with a minimum size of two acres. Maximum densities permitted within the Estate - Two Acres are one dwelling unit per two acres. These areas are located generally in a band along the center of the City. The corresponding zone district is A-2 (Agriculture - Two Acres).

**Estate - One Acre.** The Estate - One acre residential areas are intended for single-family development. Maximum densities permitted within the Estate - One Acre are one dwelling unit per one acre. These areas are located in a band along the southern part of the community. This land use category corresponds to those areas of the City zoned A-1 (Agricultural - One Acre).

**Single-Family - 20,000 Square Feet.** - Single-family 20,000 square-foot areas are intended for single-family development. Maximum densities permitted within this designation range from 1.1 to 2.1 dwelling units per acre. These areas are located, generally, at two locations along the southern City boundary. The corresponding zoning district for land use designation is R-20,000 (Residential - 20,000 square feet).

**Single-Family - 7,500 Square Feet.** - These areas are intended for single-family development. Maximum densities permitted within this designation range from 2.1 to 5.8 units per acre. This area is located east of Mount Olive Drive in the southeast corner of the City. The corresponding zoning district is R-7,500 (Residential - 7,500 square feet).

The Open Space designation has been assigned to those areas owned by the Los Angeles Flood Control District. This area is located in an area located between the Bradbury and Spinks Debris Basins. The Public Use designation has been assigned to the parcel occupied by the City Hall.



Exhibit 2-2 provides a generalized view of the Land Use Plan. Table 2-2 indicates the standards for development intensity and population density as required by State Law. The standards for development intensity are expressed in terms of units per acre and are consistent with the minimum lot size requirements contained in the City's Zoning Ordinance. The standards for population density are expressed in persons per acre. The 1990 U.S. Census statistics for average household size (2.9 persons per unit) were used to determine the population density for each residential land use category.

TABLE 2-2 LAND USE DISTRIBUTION					
Land Use Category	Area			Intensity Standards	Density Standards
	Corresponding Zoning	Acres	Percent		
Estate - 5 acre	A-5	517	41.0	1 unit/5 acres	3 persons/5 acres
Estate (Hillside) - 5 acre	A-5	316	25.1	1 unit/5 acres <sup>1</sup>	3 persons/5 acres
Estate - 2 acre	A-2	196	15.6	1 unit/2 acres	3 persons/2 acres
Estate 1 acre	A-1	109	8.7	1 unit/acre	3 persons/acre
Single-Family 20,000 sq.ft.	R-20,000	54	3.3	2.2 units/acre	6 persons/acre
Single-Family 7,500 sq.ft.	R-7,500	7	.5	5.8 units/acre	17 persons/acre
Public		4	.3	na	--
Open Space		55	4.5	na	--
<b>Total</b>		<b>1,258</b>	<b>100.00</b>		
Note: <sup>1</sup> Estate-5 acre designation located in Hillside overlay zone must comply with hillside development standards which is likely to lower development potential because of topographic constraints and those standards designed to address those constraints.					
Source: David Evans and Associates, Inc. 1993.					

There are a number of areas in the City where there are environmental constraints that need to be considered in future planning. These areas are noted in the Safety and Conservation Elements and include a number of *overlay zones* that identify additional standards and review over and above that required under the base zone designation. As a result, the Land Use Element recognizes the following overlay zones:

**Hillside Overlay.** The northernmost third of the City is located in hillside and mountainous areas. This area is subject to the requirements of the City's Hillside Ordinance.

**Resource Management Overlay.** Those areas identified in the Conservation Element as having a *High Sensitivity* in terms of potential cultural or ecological sensitivity are included in this overlay designation. The Resource Management Overlay also recognizes a number of significant ridgelines that warrant preservation. The applicable standards for this zone are outlined in the Conservation Element.

**Safety Management Overlay.** There are areas in the City that are potentially subject to wildfire, surface rupture from faulting or flooding. These areas are delineated in the Safety Management Overlay Zone. Requirements specific to certain areas located within this overlay designation are described in the Safety Element.

### *Implications of Land Use Plan*

According to the vacant land inventory, there are 74 parcels available for development. Of this total, approximately 23 parcels are included in an existing elementary school site which is still occupied by the Royal Oaks Elementary School. When eliminating the school site, there are 51 parcels theoretically available for development. The vacant parcels include the following:

- 16 five-acre lots (lots designated as Estate - 5 acre);
- 2 two-acre lots (lots designated as Estate - 2 acre); and
- 33 one-acre lots (lots designated as Estate - 1 acre).

Assuming all of these parcels are developed over the life of the Plan, an additional 51 units would be constructed. A development scenario where every parcel of land is developed to the maximum density possible under the Land Use Plan is referred to as theoretical buildout. Theoretical buildout, because it assumes every parcel will be developed to the maximum density permitted, is not likely to occur since a large number of parcels exceed the one acre, two acre, or five acre minimum lot size and subdivision of these parcels is not likely. Table 2-3 indicates the number of housing units and the resulting population that would be anticipated under a theoretical buildout scenario.

**TABLE 2-3  
THEORETICAL BUILDOUT UNDER THE LAND USE PLAN**

Land Use Category	Area-In Acres	No. of Units	No. of Persons
Estate - 5 acre <sup>1</sup>	316	32	95
Estate - 5 acre	517	103	309
Estate - 2 acre	196	98	294
Estate 1 acre	109	109	327
Single-Family 20,000 sq.ft. <sup>2</sup>	54	118	353
Single-Family 7,500 sq.ft.	<u>7</u>	<u>41</u>	<u>122</u>
<b>TOTAL</b>	<b>1,199</b>	<b>501</b>	<b>1,500</b>

Notes: <sup>1</sup> This category is subject to the requirements of the hillside development standards.

<sup>2</sup> This category also assumes the 13-acre school site (Royal Oaks Elementary School) will be developed as single-family-20,000.

Source: David Evans and Associates, Inc. 1993.









Under achievable buildout (the addition of 51 units), the City's housing stock would increase by 18 percent with a corresponding projected population increase of 153 persons (assuming an average household size of three persons per unit). Under the theoretical buildout scenario, the City's housing would increase by 220 units (an increase of 78 percent) and a corresponding increase of 650 persons. As indicated previously, the City has experienced limited growth since incorporation. As a result, the actual number of units realized over the life of this plan is not anticipated to exceed the 51 units anticipated under achievable buildout.

The majority of the vacant parcels (especially the five-acre lots) are located in hillside areas that present a number of constraints to development. As a result, the actual number of units, after the hillside development standards are imposed, are likely to reflect less development than what is actually permitted under the zoning. For purposes of analysis, however, the vacant land inventory will serve as a benchmark in calculating future development potential City wide

### *Implementation Programs*

The long-term implementation of the General Plan will be assisted by a number of ordinances and regulations:

**Zoning Ordinance.** The Zoning Ordinance of the City Code provides for the designation of zoning districts and the regulation of development within those districts. Typical development controls include the type of use allowed, density, open space, height, bulk, landscape and setback requirements and numerous other development standards. Procedural techniques for the review and regulation of development are as numerous as the requirements and standards. Those activities are administered by the Planning Commission and City Council. The land use designations provided for in this Land Use Element relate to corresponding Zone Districts included in the Zoning Ordinance. The Zoning Map, which indicates the location and extent of Zone Districts, is consistent with the Land Use Plan (Exhibit 2-2).

**Code Enforcement.** Codes and ordinances of the City of Bradbury, which implement the Land Use Element, shall be enforced. Historically, this has been achieved by City staff responses to specific complaints. If a problem has been found on investigation, a demand for compliance has been issued.

**Environmental Review.** The California Environmental Quality Act (CEQA) requires that the environmental effects of a project must be taken into account when considering certain projects. This process involves the review of a project and a subsequent determination of its potential for significantly affecting the City's and region's environmental resources. If it is found that significant impacts may occur, an Environmental Impact Report (EIR) must be prepared.





## Housing Element





## SECTION 3: CITY OF BRADBURY HOUSING ELEMENT

---

### INTRODUCTION TO THE HOUSING ELEMENT

The purpose and intent of the Housing Element is to establish a framework for responding to locally identified housing needs and to fulfill the statutory and regulatory requirements of the State of California concerning Housing Elements. Section 65583 of the Government Code states the following:

*"The Housing Element shall consist of an identification and analysis of existing and projected housing needs and a statement of goals, policies, quantified objectives, and scheduled programs for the preservation, improvement, and development of housing. The Housing Element shall identify adequate sites for housing and mobile-homes, and shall make adequate provisions for the existing and projected needs of all economic segments of the community."*

The Bradbury Housing Element is an integral part of the City's General Plan, and contains policies and programs which both complement and support the other elements of the General Plan. The Housing Element is designed to encourage the development of safe, clean, and decent housing for all segments of the community and the development of this housing is an important consideration of the Land Use Element. Through this Element the City seeks to accomplish the following:

*The objective of the Housing Element is to maintain the existing residential character of the community while providing for the housing needs of the City residents.*

The City of Bradbury Housing Element was prepared with community input in mind. The Element was reviewed by the General Plan Advisory Committee and at a series of public hearings before the Planning Commission and the City Council. In addition, a community-wide survey was undertaken as part of the General Plan Update. This Housing Element focuses on promoting the Community's vision which includes the following:

- The City's existing residential character is to be preserved.
- Future residential development must be sensitive to the environmental constraints (flooding, seismic, wildfire, and infrastructure) that are present in the City.
- The City will continue to remain exclusively residential with no commercial, industrial, or recreational development anticipated in the future and this vision is reflected in the Land Use Element.



## OVERVIEW OF HOUSING ELEMENT ISSUES

This section of the Housing Element contains the assessment of the existing and projected housing needs of the City of Bradbury. Information included in this section corresponds to the analysis required by the State Department of Housing and Community Development (HCD) which is responsible for reviewing housing elements prepared by local jurisdictions. The primary data sources for information utilized in this analysis include the Southern California Association of Governments (SCAG), the 1990 U.S. Census data, and the State Department of Finance (DOF).

### *Existing Housing Stock in Bradbury*

When the City incorporated in 1957, the City's population was 518 compared to 1994 estimates of 852 persons. According to the 1970 Census, there were 265 housing units in the City. According to the 1990 Census there were 297 units, an increase of 22 units (8 percent) over the twenty-year period (the 1980 Census identified 311 units though 50 units were lost in the fires of November 1980). According to the 1994 Department of Finance estimates, there were 285 housing units in the City. The Census and Department of Finance statistics indicate little has changed in the City since incorporation. The housing units included in Table 3-1 are classified according to U.S. Census categories. As shown in Table 3-1, the majority of the housing units in the City consist of single-family units. The Census identified only a small proportion of second units that are actually present in the City. A citywide survey was undertaken in 1994 to identify second units (or necessary units). The survey identified 61 units, bringing the total number of units in the City to 342.

TABLE 3-1 HOUSING TYPES AND NUMBER OF UNITS - 1990 CENSUS		
Type	Number	Percent
1 Unit Detached	281	97.9
1 Unit Attached	4*	1.4
2-4 Units	---	---
5-9 Units	---	---
10+ Units	---	---
Mobile Homes	---	---
Other	2*	0.7
<b>Total</b>	<b>287</b>	<b>100.0</b>
* - A citywide survey completed in 1994 identified 61 accessory units. Source: U.S. Census Bureau, 1990.		

At the time the 1990 Census was taken, there were 16 vacant housing units in the City, representing approximately 6 percent of all housing units. The total number of owner-occupied housing units is 254, representing 93.7 percent of all occupied units. Of the owner-occupied housing units which listed

their housing value, (220 respondents), the majority of the respondents (86 percent) indicated their units were appraised at \$300,000 or more. Table 3-2 provides a breakdown of the Census statistics relative to housing values. The median value of specified owner-occupied housing units was identified as \$500,000 plus.

TABLE 3-2 VALUE OF HOUSING IN BRADBURY - 1990 CENSUS		
Value	Number	Percent
< \$50,000	0	
\$50,000-\$99,999	2	1%
\$100,000-\$149,999	2	1%
\$150,000-\$199,999	2	1%
\$200,000-\$299,000	24	11%
\$300,000+	190	86%
Source: U.S. Bureau of the Census, 1990, CHP-1-6.		

Monthly contract rent is listed in Table 3-3. As indicated previously, the great majority (94 percent) of the units in the City are owner-occupied. Of the total 13 rentals, 8 (62 percent) are rented for less than \$1,000 per month according to the 1990 Census.

TABLE 3-3 MONTHLY CONTRACT RENT IN BRADBURY - 1990 CENSUS		
Monthly Rent	Number	Percent
Less than \$250	2	15.4
\$250 - \$499	3	23.1
\$500 - \$749	1	7.6
\$750 - \$999	2	15.4
\$1,000 or more	<u>5</u>	<u>38.5</u>
Total Occupied Units:	13	100.0
Median Contract Rent: \$813		
Source: U.S. Bureau of the Census, 1990, CHP-1-6.		

According to the 1990 Census, 17 units (5.9 percent) were constructed prior to 1940, 11 units (3.8 percent) were constructed between 1940 and 1949, and 104 units (36.2 percent) were constructed between 1950 to 1959. According to the 1990 Census, over 45 percent of the existing units were over 30 years old. Of the remaining units, approximately 120 (42 percent) were built between 1960 and 1979. The median year built was 1962. In November 1980, 50 units representing 16 percent of the City's total housing stock, were lost in a wildfire. This loss and subsequent rebuilding has "skewed" the age distribution of the housing stock.

The majority of housing units in the City use septic tanks to handle effluent. Of the 287 housing units, 110 units are connected to public sewers and 117 use septic tanks or cesspools. Five households were identified by the 1990 Census as lacking adequate plumbing. The majority of those units connected to sewer are located in the southern portion of the City.

A survey of housing conditions in the City indicates that fewer than five units require minor rehabilitation and there are no units in need of replacement.

### ***Affordable Housing***

While the majority of housing units in the City of Bradbury are occupied by upper income households, there are affordable units located in the City in the form of second units, guest quarters, groom/maid quarters, manager's house. The ability of the City to accommodate more conventional types of affordable housing is constrained by high land costs and significant constraints to development in the areas of the City that remain undeveloped.

A single important resource in the City that promotes the development of affordable units are the accessory units found in the City. Building permit and code enforcement records were reviewed to identify the accessory units in Bradbury. The City (at the request of HCD) then contacted individual property owners to determine the number of persons residing in the unit, their relationship to the property owner (family members, employees, etc.), and affordability. A total of 61 units were identified in City records. These units accounted for approximately 60 percent of the City's total housing stock.

A total of 37 property owners responded to the survey, a response rate of 64 percent. A total of 41 persons resided in the 23 occupied units identified in the survey. Of this total, 17 persons were classified as "on site employees" and 24 persons were identified as "friends or family members" of the property owner. A total of 24 accessory units were vacant at the time the survey was completed. According to building permit records, six accessory units have been constructed since 1989.

TABLE 3-4 AFFORDABLE HOUSING			
Category	Employees	Friend/Relatives	Unknown
Very Low Income	7 units	4 units	--
Low Income	5 units	1 unit	--
Unclassified Income	--	--	6 units
Vacant	--	--	17 units
No Response	--	--	<u>21 units</u>
	12 units	5 units	44 units
Source: City of Bradbury, 1994.			



### Demographic Characteristics of Bradbury Residents

According to the 1990 Census, the population of the City of Bradbury was 832 persons. At the time of incorporation, the City had 518 residents. In the 33 years between incorporation and the 1990 Census, the City's population grew by 314 persons or by 61 percent. The 1994 Department of Finance estimates indicate there are 852 persons in the City. The 1990 Census revealed that the median age in the City is 36.3 years. This figure is substantially higher than the Los Angeles County median age of 30.7 years.

TABLE 3-5 POPULATION AGE DISTRIBUTION OF BRADBURY RESIDENTS		
Age	Number	Percent of Total
Under 5	79	9.5
5-17	158	19.0
18-24	55	6.6
25-44	273	32.8
45-64	184	22.1
65 +	<u>83</u>	<u>10.0</u>
<b>Total Persons:</b>	<b>832</b>	<b>100.0</b>
<b>Median Age: 36.3 years</b>		
Source: U.S. Bureau of the Census, 1990.		

Of the total population, 405 (48.9 percent) are male and 424 (51.1 percent) are female. Persons of Hispanic origin account for approximately 14.2 percent of the population (122 persons). White persons (which includes Hispanics) accounted for approximately 80 percent of the population, or 669 persons. The City's ethnic and racial characteristics are summarized in Table 3-6.

TABLE 3-6 CITY OF BRADBURY RACE AND ETHNICITY OF BRADBURY RESIDENTS		
Race	Number	Percent
White <sup>1</sup>	669	80.0
Asian/Pacific Islander	128	15.0
Black	4	0.5
American Indian, Eskimo, etc.	2	0.2
Other	<u>29</u>	<u>3.0</u>
<b>Total:</b>	<b>832</b>	<b>100.0</b>
<sup>1</sup> Note: Includes Hispanic Persons		
Source: U.S. Bureau of the Census, 1990, CHP-1-6.		

In 1990, there were a total of 254 households in the City. Of these, 222 (87 percent) were family households, of which 197 (88 percent) were married-couple families and 15 (7 percent) were female head of households. The average number of persons per family was 3.2. The average household size for all occupied units was 2.9 persons per unit.

### *Socioeconomic Characteristics of Bradbury Residents*

Bradbury's 1989 median household income of \$105,178 was three times the 1989 median income of Los Angeles County, which was \$34,965. These statistics underscore the City's relative affluence compared to the region as a whole. Bradbury's median household income increased 63 percent in the last decade. Table 3-7, indicates the income ranges used to define very low income, low income, moderate income, and upper income households in Los Angeles County.

<b>TABLE 3-7</b> <b>LOS ANGELES COUNTY - INCOME RANGES BY CATEGORIES (May 1992)</b>		
<b>Income Category</b>	<b>Percentage of Area Median Income</b>	<b>Income Range as Percent of \$42,300 L.A. County Median</b>
Very Low Income	Below 50%	Under \$21,150
Low Income	50% to 80%	\$21,151-\$33,840
Moderate Income	80% to 120%	\$33,841-\$50,760
Upper Income	Over 120%	\$50,761 or more
Source: Los Angeles County Income Limits, May 1992.		

The 1990 Census data for Bradbury indicates that there were a total of 14 households below the poverty level at the time the Census was taken. In this group there are 12 households headed by a person under the age of 64 and two with the head of the household 65 years of age or older. Of the total number of households at the poverty level, three are one-person households, and 11 are family households. Of the 14 householders below the poverty level, there are six males and eight females. A total of six persons in all households receive public assistance, five between the ages of 15-65, and one over the age of 65.

According to the 1990 Census, 264 males worked and 38 were unemployed in 1989. One-hundred ninety females worked and 118 were unemployed during this same period. Of all employed persons 16 years and older, their type of employment, by industry as identified in the 1990 Census, is included in Table 3-8. A substantial portion of those individuals not employed were retired (Table 3-5 indicated that 10 percent of the City's population was 65 years of age or older). In 1990, the overall unemployment rate was 2.9 percent, with a 3.2 percent rate for males, and a 2.3 percent rate for females.

**TABLE 3-8  
EMPLOYMENT BY INDUSTRY**

Industry	Persons
Agriculture, Forestry & Fisheries	29
Mining	0
Construction	27
Nondurable Goods Manufacturing	30
Durable Goods Manufacturing	29
Transportation	7
Communications and Other Public Utilities	8
Wholesale Trade	16
Retail Trade	65
Finance, Insurance and Real Estate	37
Business and Repair Services	9
Personal Services	9
Entertainment & Recreation	23
Health Services	50
Educational Services	34
Other Professional and Related Services	20
Public Administration	14
<b>Total:</b>	<b>407</b>

Source: U.S. Bureau of the Census, 1990.

### *Existing Affordable Housing Needs in the City*

The *Regional Housing Needs Assessment (RHNA)* identifies *affordable housing needs* in terms of overpayment by lower income households. Overpayment is defined as rent or house payments that exceed 30 percent of income. A household is defined as in need of assistance only if it meets the following income and payment criteria:

- Lower income households have an annual income of 80 percent or less of the median income for Los Angeles County; and
- Overpaying households pay an inordinate share of that income (greater than 30 percent) toward a house payment or rent.

Households that earn 80 percent or less of the median income of the County are termed *lower income*. Among the four income classes identified in the RHNA, lower income households constitute the very low income (less than 50 percent of median), and low income (50-80 percent of median) categories (refer to Table 3-7 which provides a breakdown of the income categories for Los Angeles County). In the December, 1988 revised RHNA, SCAG determined that no lower income households in the City of Bradbury pay 30 percent or more of their income on housing costs.



### *Future Housing Needs*

Pursuant to California Government Code Section 65584(a), SCAG is responsible for analyzing and identifying the future housing needs of all income levels for each city in the Southern California region, including the City of Bradbury. Future housing need refers to the number of additional housing units, by income level, that should be added to each locality's housing stock inventory during a specified planning period, in this case between 1989 to 1996. The future housing needs formula is supposed to consider market demand for housing, employment characteristics, availability of sites suitable for development, availability of public facilities, and special needs groups.

State law requires that, in allocating future need by income level, further *impaction*, or concentration of lower income households, should be avoided; and localities with a higher proportion of lower income households than the number formed in the region as a whole are generally are considered to be impacted. According to the background information published by SCAG regarding the 1988 RHNA, the RHNA addresses the issue of impaction by reducing lower income household allocations and increasing moderate and upper income household allocations to impacted cities, and distributing to the non-impacted localities these additional lower income households and reductions in moderate and upper income households.

The assessment of future housing need covers the period from July 1, 1989 to June 30, 1996. For this period, SCAG allocated to the City of Bradbury a future housing need of 28 units. In other words, the RHNA indicated that 28 additional units are needed between the years of 1989 and 1996 to enable the City to accommodate its share of regional growth. Table 3-9 indicates the future housing need, by income level, allocated to the City of Bradbury by SCAG.

As indicated in Table 3-9, the RHNA called for three units to be provided for very low income households, four units for low income households, four units for moderate income households, and 18 units for upper income households.

TABLE 3-9 FUTURE HOUSING NEEDS BY INCOME LEVEL			
Income Category	Future Need		Housing Developed 1989-94
	Number	Percent	
Very Low	3	10.3	10.3
Low	4	13.7	13.7
Moderate	4	13.7	13.7
Upper	<u>18</u>	<u>62.0</u>	<u>62.0</u>
<b>Total Future Need:</b>	<b>28</b>	<b>100.0</b>	<b>100.0</b>
Note: SCAG Existing Need numbers do not add up precisely.			
Source: SCAG Revised Regional Housing Needs Assessment, December 1988, Table 7.			

### Special Housing Needs

Pursuant to the Housing Element Legislation, this Housing Element must include an analysis of special housing needs. The special needs groups include the disabled, elderly, large families and overcrowded households, families with female heads of households, and farmworkers. Additionally, a discussion of persons and families in need of emergency shelter must also be included.

**Disabled Households** - The 1990 Census reports that there are a number of disabled persons in the City of Bradbury, based upon those with work disabilities and those with mobility or self-care limitations. The housing needs of the handicapped vary with the type and severity of the particular handicap, and not all handicapped persons require specialized housing consideration. Table 3-10 identifies the disability and employment status of persons (16 years and over) in the City. Approximately 33 different programs are available to handicapped, special education and disabled persons in the San Gabriel/Pomona Valley.

TABLE 3-10 DISABILITY AND EMPLOYMENT STATUS OF BRADBURY RESIDENTS	
Status	No. of Persons
Total Persons in Labor Force	419
Persons with Work Disabilities in Labor Force	14
Persons with Work Disabilities Not in Labor Force	2
All Persons with a Mobility or Self-Care Limitation	41
Source: U.S. Bureau of the Census, 1990.	

**Elderly Persons** - The 1990 Census statistics (refer to Table 3-6) indicate that 99 persons, or 11.9 percent of the City's population, is 65 years of age or over. An additional 86 persons are between 55 and 64 years of age. Senior citizens typically have fixed incomes and, therefore, may experience difficulty in maintaining adequate living arrangements due to increased housing costs. Senior citizen homeowners are still subject to increasing utility rates and increased costs for property maintenance. Approximately 51 senior citizen programs are available in the San Gabriel/Pomona Valley.

**Large Families** - Large families, those with five or more persons, can experience a greater incidence of overcrowding due to the large family size. According to the 1990 Census, large families (with 5 or more persons) represent 22 percent of all family households, or 50 of the 254 family households in Bradbury. Large families below the poverty level are a good indicator of a housing problem; however, in the City of Bradbury, no persons between the ages of 0-17 were listed below the poverty level in the 1990 Census. Therefore, there are no large family households qualifying as a special housing needs category in Bradbury.

**Overcrowded Households** - An overcrowded household is typically the result of a shortage of space. Specifically, overcrowding occurs when there are more than 1.01 persons per room (excluding bathrooms, storage areas, and hallways or stairways). According to the latest Census figures, the City



of Bradbury has a low number of persons per household (3.21) and a high number of rooms per household (7.6). This is a reflection of the City's relative affluence. This also indicates that few, if any, of the households in the City are overcrowded.

**Families with Female Heads of Households** - At the time of the 1990 Census, Bradbury had 15 female-headed households. However, none of these households had children. Single-parent households, therefore, are not considered an issue of concern in the City.

**Farmworkers** - According to the 1990 Census, only 20 employed persons, or 4.9 percent of the work force in Bradbury listed farming, forestry or fishing as their occupations. Of the 20 persons identified in the Census, it is impossible to tell if any are farmworkers. Some homeowners within the City may provide housing to groundskeepers. In addition, a number of the larger lots have orchards or groves.

**Families and Persons in Need of Emergency Shelter** - In 1984, the State Housing Element law was amended to add "families and persons in need of emergency shelter" to the special housing needs groups to be considered in each locality's Housing Element. However, by their very nature, homeless persons and families are difficult to quantify, and their special housing needs are as varied as their individual circumstances. No data regarding homeless persons in the City of Bradbury is presently available, and no homeless persons are known to be in the City. The City's inability to locate any homeless persons suggests that existing social service providers - both in the vicinity of Bradbury and elsewhere in Los Angeles County, are providing adequate shelter and other services to meet the needs of persons and families in need of emergency shelter in the City. If a homeless person came to City Hall, they would be referred to one of the 17 homeless programs located in the San Gabriel/Pomona Valley. These may include the following:

- United Way - San Gabriel Valley Region, located at 22 West Live Oak Avenue, Arcadia;
- People For People, located at 860 East Mission Drive, San Gabriel;
- Los Angeles County Department of Public Social Services, San Gabriel Valley District, located at 9521 East Valley Boulevard, El Monte;
- Pomona Valley C.C. shelter program, located at 1753 North Park Avenue, Pomona; and
- Union Station Foundation, located at 412 South Raymond Avenue, Pasadena.



### ***Energy Conservation***

California Government Code Section 65583(a)(7) indicates that Housing Elements shall include an analysis of opportunities for energy conservation with respect to residential development. In 1974, the California Legislature created the California Energy Commission to deal with the issue of energy conservation. The Commission adopted conservation standards and guidelines which have been incorporated into the Uniform Building Code for new construction. These standards apply to all new construction and to major remodeling of existing structures. Basically these standards indicated the insulation and design requirements for walls, ceilings and floors of all habitable spaces.

In relation to new residential construction, the energy efficient design standards do add to the initial development costs. However, over time the savings on cost and consumption of energy should result in lower overall housing costs. Since utility costs are among the highest ongoing components of housing costs, these savings in energy costs should have a long term effect of creating more affordable housing costs in the future. Opportunities for additional energy savings are incorporated within the guidelines prepared by the California Energy Commission. Additionally, existing structures are encouraged to be retrofitted with a variety of energy saving devices to conserve both energy and water.

### ***Units at Risk***

The City of Bradbury does not have any units listed in the "1990 Inventory of Federally Subsidized Rental Units at Risk of Conversion", nor in subsequent updated information made available by the division of Housing Policy Development of the State Department of Housing and Community Development. The City has not used Community Development Block Grant (CDBG) funds for multi-family rental units (there are no multi-family units in the City). The City is not located in a qualifying rural Farm Housing Authority area and no bond financed units are eligible to terminate affordability controls within the next ten years according to the 1990 "Annual Summary: The Use of Housing Revenue Bond Proceeds", prepared by the California Debt Advisory Commission. The City has not had an in-lieu fee or inclusionary program and no projects have been approved pursuant to Section 65916 of the Government Code. Since no units are at risk or even exist in the City of Bradbury, their preservation is not required.

### ***Governmental Constraints to Residential Development***

Local Housing Elements, pursuant to Article 10.6, must analyze potential and actual governmental constraints upon the maintenance, improvement, or development of housing for all income levels. The categories of constraints required in the analysis include governmental and market constraints. The City has also expanded the discussion of constraints to include environmental factors.

***Land Use Controls*** - The Land Use Element of the General Plan establishes the principal residential land use categories to be developed in the community. The Zoning Code establishes the regulations

affecting the uses, density, and size of housing permitted in different zones of the City. The Land Use Element establishes the basic land use policies for the City. Density provisions for residential use are directly linked to the City's Zoning Ordinance, and the Land Use and Housing Elements provide the basis for residential development in the City. The General Plan establishes five residential use categories comprising 96 percent of the developable land in the City. The permitted densities, their respective implementing zoning, and potentially available lots, are described in Table 3-11. Based upon the size of existing parcels and permitted zoning, the City has a maximum development potential of 501 dwelling units (220 units over the existing number).

**TABLE 3-11  
RESIDENTIAL LAND USE DESIGNATIONS**

Land Use Designation	Implementing Zoning Designation	Available Area	Potential Development
Estate - 5 acre	A-5	1,133 acres	135 units
Estate - 2 acre	A-2	196 acres	98 units
Estate - 1 acre	A-1	109 acres	109 units
Single-Family 20,000 sf	R-20,000	54 acres	118 units
Single-Family 7,500 sf	R-7,500	17 acres	41 units
<b>TOTAL</b>			<b>501 units</b>
<sup>(1)</sup> Existing Elementary School			
Source: Bradbury General Plan Land Use Map			

**Building Codes and Enforcement** - Bradbury has adopted the Los Angeles County Building Code, which is almost identical to the Uniform Building Code. The Los Angeles County Building Code does not impose any housing standards greater than those contained in the Uniform Building Code. State law does not permit variances to the Uniform Building Code, and therefore, Bradbury cannot reduce construction costs by revising its Building Code requirements.

**Site Improvements** - Developers of residential property in Bradbury are required to install streets and water lines in the public right-of-way within and adjacent to a division of property. These facilities are usually not dedicated to the City, but remain the responsibility of a homeowners association to maintain. Construction of these off site improvements widely vary, but are estimated to be about \$150.00 per lineal foot.

**Fees and Other Exactions** - Various fees are charged by the City of Bradbury, the County Sanitation Districts of Los Angeles County, and the school district, for the provision of services such as environmental review, permit processing and delivery of sanitation services and water. These fees are fairly uniform and standard throughout the surrounding communities, as well as in Bradbury (as shown in Table 3-12). They are not, therefore, considered to be a development constraint. The City processes Planning and Building applications in accordance with State Law and within the time frames specified by existing laws. Fees are comparable to surrounding cities and are not considered to be a development constraint in the City.









**TABLE 3-12  
COMPARISON OF PLANNING PROCESSING FEES**

	<b>City of Bradbury</b>	<b>City of Duarte</b>	<b>City of Azusa</b>	<b>City of Monrovia</b>	<b>County of Los Angeles</b>
Zone Change	\$1,500.00	\$850.00	\$800.00	\$610.00	\$3,619
Variance	\$ 750.00	\$450.00	\$350.00	\$550.00	\$2,588
Conditional Use Permit	\$ 750.00	\$450.00	\$350.00	\$685.00	\$2,588
Appeal	\$ (?)	No Charge	\$150.00	\$264.00 City Council \$400.00 Commissions	\$282 zone cases \$282 subdivision (commission) \$269 Bd of Supervisors
Subdivision	\$3,500 + \$100/lot	\$500.00	\$800.00	\$775.00 + \$85/lot	\$5,370.00 + \$30/lot for 10 lots and \$1091/lot for 11-25 lots

### ***Processing and Permit Procedures***

Development proposals submitted to the City are reviewed for compliance with City regulations and ordinances. After determination of compliance, they are scheduled for Planning Commission and City Council hearings within the next 2 months. Projects that require environmental review may lengthen this review time by 6 months. Approval by the City Council allows the developer/owner to submit building plans. These plans are forwarded to the County of Los Angeles, who provide plan check services to the City. Approval of building plans is followed by issuance of the City building permit.

### ***Market Constraints to Residential Development***

***Availability of Financing*** - The City of Bradbury, like all other cities, is limited in its ability to provide housing programs based upon the availability of funding from outside sources. Federal and State programs, which have flourished in the past, are subject to annual fluctuations based upon decisions which are beyond the City's control. Presently, the City of Bradbury does not apply for Community Development Block Grant Funds, but if they did, they still could not commit to continued availability of such programs, based upon Federal or State funding. Furthermore, State initiatives which limit and/or remove City revenues, have been subject to substantial changes in recent years. Recently, the State has been diverting City funds to education accounts.

***Price of Land and Cost of Construction*** - Potential non-governmental constraints included within the provisions of the Housing Element requirements include issues of land costs, construction costs, and the availability of financing. Analysis of these issues can shed light on the private market forces

which affect housing availability/affordability. Additionally, depending upon the extent of housing availability/affordability, this information can signal the public sector as to the need to adjust land use, zoning, and housing policies. The cost of financing, the price of land, and the cost of construction, are currently in decline in Southern California, such that housing is becoming more affordable. However, because Bradbury is fully developed the primary constraint for new or additional housing development is the lack of available inexpensive land for development.

**Environmental Constraints.** There are substantial environmental constraints that need to be considered when considering future development. These constraints include the Sierra Madre Fault zones in the central and northern portion of the City. The wildfire risk is high at certain times of year (in November, 1980, fifty homes were lost due to a wildfire). Finally, the area of the City with larger lots are located in hillside and mountainous areas making high density development difficult.

**Infrastructure Constraints.** The majority of the City is not served by sewer lines and individual homes have their own septic systems to handle effluent. In addition, the water distribution system is unable to accommodate higher density development.

## HOUSING PLAN

Virtually the entire City is residential, with the exception of two areas designated as open space (this land is publicly-owned and used for flood control) and public (the parcel occupied by City Hall). A parcel currently occupied by an elementary school is designated as residential in both the General Plan and Zoning Code. The development of the Land Use Plan as it relates to housing considered on the following:

- The City has changed little since incorporation. In 1970 there were 265 units and in 1994 there were an estimated 285 units.
- The City's rural character not only reflects the community's overall vision for the community but is also sensible from an environmental standpoint.
- The City has a small population (852 residents), and the City does not have a Redevelopment Agency retail sales tax base, or other sources of revenue that could be used to develop housing. Future residential development in the City will eventually rely on the marketplace.

### *Land Inventory/Availability of Land for Residential Development*

New housing constructed in Bradbury over the past several years has consisted predominantly of large homes, with supplemental living quarters for relatives, groundskeepers, housekeepers and groomers. All of the remaining vacant land in the City is zoned for residential use. According to the vacant land



inventory completed for the Housing Element, there are 107 parcels available for development. Of this total, 56 parcels covering 13 acres are included in an existing elementary school site which is still occupied. After eliminating the school site, there are 51 parcels on approximately 320 acres that are theoretically available for residential development. The parcels include the following: 16 five-acre lots; 2 two-acre lots; and 33 one-acre lots. Exhibit 3-1 indicates the area of the City devoted to residential development under the Land Use Plan.

The majority of the vacant parcels (especially the five-acre lots) are located in hillside areas that present a number of constraints to development. As a result, the actual number of units, after the hillside development standards are imposed, are likely to reflect less development than what is actually permitted under the General Plan. For purposes of analysis, however, the vacant land inventory will serve as a benchmark in calculating buildout projections.

### *Objectives for Residential Development*

As indicated previously, the General Plan Land Use Policy provides for a theoretical development of 501 units. This total assumes that all of the undeveloped land within the City will be developed to the maximum intensity permitted under the General Plan. A more realistic figure considers only those parcels that are actually available for development. As indicated previously, there are 107 undeveloped parcels zoned for residential development in the City. Of this total, 56 parcels are included within the 13-acre site occupied by the Royal Oaks Elementary School which is likely to remain over the life of the Plan. The 51 remaining parcels would potentially result in the development of 16 5-acre sites, two 2-acre sites, and 33 1-acre sites.

As indicated previously, the Southern California Association of Governments (SCAG) indicates the number of units the City should strive to accommodate through 1996 (refer to Table 3-9). SCAG, in its Regional Housing Needs Assessment, indicates there is a need for 28 units in the City. Of this figure three units should be developed for very low income households, four units should be constructed for low income households, four units for moderate income households, and 18 units for upper income households.

The 1990 Census reported that there were 297 housing units in the City. According to the 1994 Department of Finance (DOF) estimates there were 285 units. The discrepancy between the Department of Finance figures and the U.S. Census figures are likely due to how accessory or secondary units were tabulated. In the 1990 Census, six units were identified as being either "attached" or "other" which were second units identified in the Census (there are no multiple family or attached units in the City). The 1994 DOF estimates identified four "attached" and six units as "multiple". Again, these ten units identified by the DOF are second units.

Due to the discrepancy between the DOF and Census figures, City records were consulted to identify the number of housing units that have been constructed in the City over the past five years. The survey identified building permits and demolition permits that had been issued since 1989. These

statistics indicated that a single housing unit had been demolished and 20 primary housing units had been constructed.

The survey completed to identify secondary or accessory units in the City indicated that a total seven units had been constructed since 1989. Building permit records identified 3 accessory units as having been constructed since 1989. All of these units are classified as affordable units (that is units available to households with *very low* and *low* incomes).

HCD requires that local governments identify quantified objectives for new housing for the planning period governed by the Housing Element. Table 3-13 indicates the number of housing units the City is expected to accommodate under its Regional Housing Needs Assessment developed by SCAG which is then compared to the number of units that were both provided during the 1989-1996 planning period and those units that are projected through to the end of the 1989-1996 planning period. In Table 3-13 the *unmet need* refers to the difference between the RHNA objective and the actual number of units constructed in 1989 through 1994.

TABLE 3-13 QUANTIFIED OBJECTIVES (1989-1994)					
Program	Very Low Income	Low Income	Moderate Income	Upper Income	Total
RHNA Objective (1989-1996)	3	4	4	18	28
Units Constructed (1989-1994)	3	4	0	20	27
Unmet Need (RHNA Minus New Units Constructed)	0	0	-4	+2	-1
Quantified Objective	7	0	4	18	28
Source: Southern California Association of Governments, 1989; City of Bradbury, 1994.					

As indicated in Table 3-13, the City has accommodated the RHNA objective for very low income and low income housing through the construction of accessory or secondary units. In addition, the City exceeded the RHNA objective calling for 18 housing units for upper income households. HCD has indicated that if the City exceeds the number of very low income units called for in RHNA, these units can be credited towards the City's *moderate income* housing allocation. The City has a number of programs to promote the development of accessory and secondary units which will be effective in enabling the City to accommodate the RHNA objective for very low and low income. The City's ability to promote the development of housing for moderate income households is constrained by the lack of available land, lack of redevelopment and other City programs to subsidize housing development, the constraints present in the City which result in increased development costs, and the severe environmental constraints (wildfire, seismic, etc) which present a risk to future residents in undeveloped areas in the northern portion of the City.



## ***Housing Policies and Programs***

The City of Bradbury Housing Element provides for the creation or continued implementation of a number of programs that will accomplish the following:

- ***Housing Conservation.*** The City is preserving existing homes and neighborhoods through the Land Use Element by designating as residential, all privately-owned land in the City.
- ***New Housing.*** The City is providing opportunities for the development of new housing through its General Plan. The Zoning Consistency Program is being undertaken to assure that land use policies in the General Plan are implemented. In addition, the City will strive to streamline its permit processing as a means to remove potential governmental constraints.
- ***Affordable Housing.*** The City's only mechanism to promote affordable housing and to assure that some residential development serves those households in need of affordable housing is the Second Unit Program. Other programs relative to affordable housing include the Fair Housing Information Program.

Housing policy is intended to underscore the City of Bradbury's commitment to assure the continued maintenance, improvement and provision of housing within the City. This section provides specific details of programs which will aid in the implementation of the City's housing policy. A description is provided for each implementation measure. Program information is also intended to show the City's commitment to maintain, improve and develop housing in the community through a "good faith, diligent effort" as required by State Housing Law (Government Code Section 65583(c)).

***Policy 1:*** The City will promote and cooperate in the enforcement of fair housing laws.

***Fair Housing Information Program:*** The City will coordinate with and refer complaints concerning housing discrimination to the Long Beach Fair Housing Council. The City will also maintain a listing of other agencies that may assist in the enforcement of fair housing laws and practices. The City will prepare a flyer which discusses fair housing requirements and the availability of services that can be used by residents seeking assistance. Fair housing information will be provided in City Hall.

**Timing:** 1995  
**Funding:** General Fund  
**Monitoring:** Administrative Assistant



**Policy 2:** The City will promote the development of a variety of housing types and continue to provide adequate sites for new residential development.

**General Plan Consistency Program:** The City will actively implement the General Plan, make the appropriate revisions to the Zoning Ordinance Map, and identify sites that are available for residential development. The City has retained engineering and planning services under contract to initiate any rezoning required to implement the General Plan. The program will be initiated with a comprehensive survey indicating those parcels that are nonconforming to the General Plan. The City will then undertake the rezoning of those parcels identified as being nonconforming.

**Timing:** 1995  
**Funding:** General Fund  
**Monitoring:** City Planner

**Policy 3:** The City will pursue opportunities to provide housing for low and moderate income households through the second/accessory unit program.

**Second Unit Program:** The City will actively implement the second unit ordinance as a means to provide affordable housing for those needing such housing in the City. The City will prepare a handout that will be made available at City Hall for residents interested in constructing second units. The first step of the program involved the revision of the City's Second Unit Ordinance to comply with current state law. The City Attorney prepared a draft ordinance which was reviewed by the Planning Commission and City Council. The draft ordinance was then sent to HCD for review and comment. HCD's comments were then incorporated into the draft which was then adopted by the City Council. The second component of the program involves publicizing the second unit ordinance in the City's newsletter. Second units make up a substantial portion of the affordable housing in the City. A total of 61 units were identified in a recent City survey, accounting for approximately 20 percent of the City's housing stock.

**Timing:** Ongoing  
**Funding:** General Fund  
**Monitoring:** City Planner and City Manager

**Policy 4:** The City will work to remove those governmental constraints that limit or discourage the development of new housing in the City.

**Development Streamlining Program:** The City will actively pursue ways to streamline permit processing in the City. The City has initiated this program through its review of the development code and hillside development standards. The Second Unit Ordinance Revision (mentioned previously) is a component of this program.

**Timing:** 1995  
**Funding:** General Fund  
**Monitoring:** City Planner and City Manager

**Policy 5:** The City will work to conserve and improve the existing housing (including affordable housing) in the City.

**Code Enforcement Program:** The City will continue to use code enforcement measures where required to ensure that the existing housing stock in the City is maintained and preserved.

**Timing:** Ongoing  
**Funding:** General Fund  
**Monitoring:** City Manager

**Policy 6:** The City will promote and encourage public participation.

**City Newsletter Program:** The City will continue to use the newsletter and other outreach measures to educate the community regarding housing issues.

**Timing:** Ongoing  
**Funding:** General Fund  
**Monitoring:** City Administrator





## Open Space Element





## SECTION 4: THE CITY OF BRADBURY OPEN SPACE ELEMENT

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### INTRODUCTION TO THE OPEN SPACE ELEMENT

The Open Space Element of the *Bradbury General Plan* establishes a long-range program for the preservation of open space areas in the City. The Element includes an inventory of both public and private open space areas for the continued protection of these resources. The preservation of open space is necessary for the maintenance of the low density character of the area, the enjoyment of outdoor recreation, the protection of public safety, and the preservation of important views and natural resources. As a limited and valuable resource in the City, open space areas must be preserved in spite of development pressures.

The Open Space Element fulfills the requirements of *Section 65560 to 65570 of the California Government Code* regarding the preparation of an open space plan for the City. Open space refers to land or water which is unimproved and devoted for the preservation of natural resources, for outdoor recreation or for public health and safety concerns. Open space includes habitats of wildlife species, streams and other bodies of water, agricultural land, groundwater recharge areas, areas with mineral deposits, trails, parks, outdoor recreation areas, utility easements, and scenic highway corridors. Open space lands may also include areas requiring the regulation of hazardous conditions such as earthquake fault zones, unstable soils, flood plains, and watersheds. The Open Space Element is closely related to the Conservation Element. Both elements deal with the preservation of natural resources. A key objective of the Open Space Element is to:

*...maintain the rural character of the community and to maximize the existing open space resources.*

### OVERVIEW OF OPEN SPACE ISSUES

The City of Bradbury is located at the foot of the San Gabriel Mountains, with vast areas of open space in the hillsides. They include land which is left undeveloped for safety and conservation purposes, as well as land that remains undeveloped due to property owner preference.

Vacant land in the City includes undeveloped private land or public areas retained for open space. Open space areas include those areas unsuitable for development due to steep slopes or unstable ground conditions. Other open space areas remain undeveloped in order to comply with existing land use controls. These include parks, building setback areas, utility easements, school fields and equestrian trails.

The City is developed with fairly low density development in most areas. The land use analysis shows that while there are large undeveloped areas in the City, many of these areas are not suitable for development. They generally feature steep slopes or serve as water drainage courses. Although much of this land best serves as open space, they are under private ownership, and remain undeveloped at the property owner's discretion.



Field surveys were conducted in the summer and fall of 1993, as part of the General Plan program, to identify the location and distribution of development in the City. The City's open space areas include *vacant land* (parcels where future development may occur); debris basin and flood control channels; orchards; individual lot yards; *trails*; *private open space* (private recreational facilities) and other *open space* such as hillsides and canyons. Exhibit 4-1 shows the location and types of open space in the City. Open space areas on the norther portion of the City are mostly undeveloped due to steep slopes. Table 4-1 summarizes the open space areas within the City.

TABLE 4-1 OPEN SPACE/VACANT LAND		
Description	Area (In Acres)	Future Status
Vacant Subdivided Parcels		
Estate - 5 acre (16 lots)	80 acres	developable
Estate - 2 acre (2 lots)	4 acres	developable
Estate - 1 acre (33 lots)	33 acres	developable
Undeveloped Hillside	331 acres	Environmental Constraints
Flood Control	150 acres	Public Ownership
Source: City of Bradbury, 1993.		

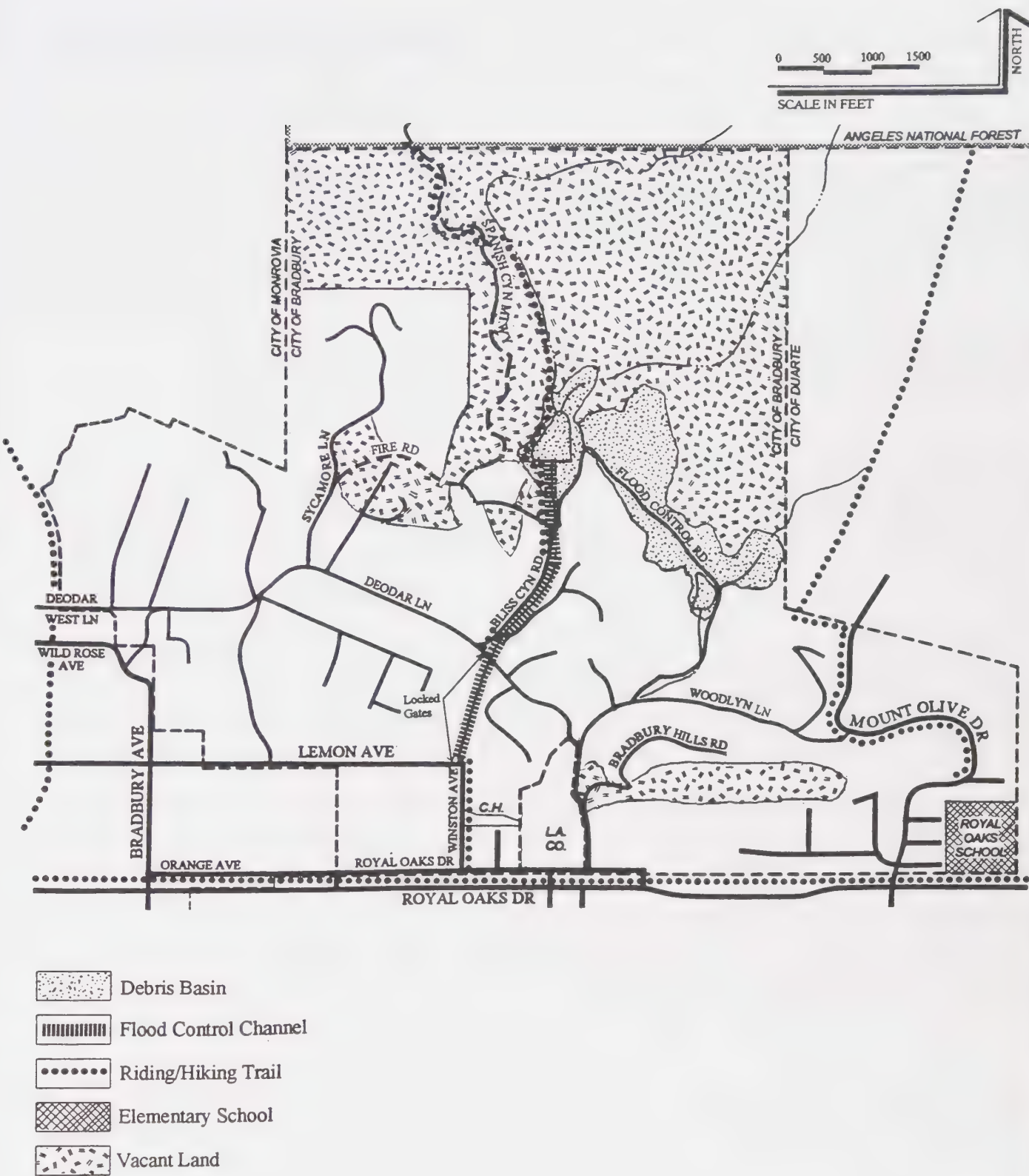
According to the vacant land inventory, there are 74 parcels available for development. Of this total, approximately 23 parcels are included in an existing elementary school site which is still occupied. When eliminating the school site, there are 51 parcels theoretically available for development. The parcels include the following:

- 16 five-acre lots (lots designated as Estate - 5 acre);
- 2 two-acre lots (lots designated as Estate - 2 acre); and
- 33 one-acre lots (lots designated as Estate - 1 acre).

## OPEN SPACE PLAN

In the development of the Open Space Plan, the following issues need to be considered:

- **Open Space Resources.** The City's lower density character, the character and nature of past development, the area's topography, and the community's concern with the preservation of the environment has resulted in the preservation of a substantial







amount of open space. A major focus of the General Plan and the Open Space Element is the continued preservation of the open space areas in the City.

- ***Environmental Resources.*** The City is rich in natural and cultural resources which warrant preservation. A major objective of the Open Space Plan will be to preserve these resources for the future enjoyment and education of the region's residents. The Conservation Element has designated these areas as Resource Management Overlay Zones.
- ***Environmental Constraints.*** The Safety Element has identified a number of areas of the City subject to a potential natural hazard. The Sierra Madre fault zone, hillside overlay zone, and flood risk areas are included in a Safety Management Overlay Zone as shown in Exhibit 6-3.

The Bradbury and Spinks debris basins are areas preserved as open space to prevent flood hazards in the area. Safety issues (hillside areas, debris basins, earthquake faults, etc.) are addressed in the Safety Element. Technically, the Los Angeles County Flood Control channels which transect the City can be considered open space, as it will remain as open area as long as it serves its public safety purposes.

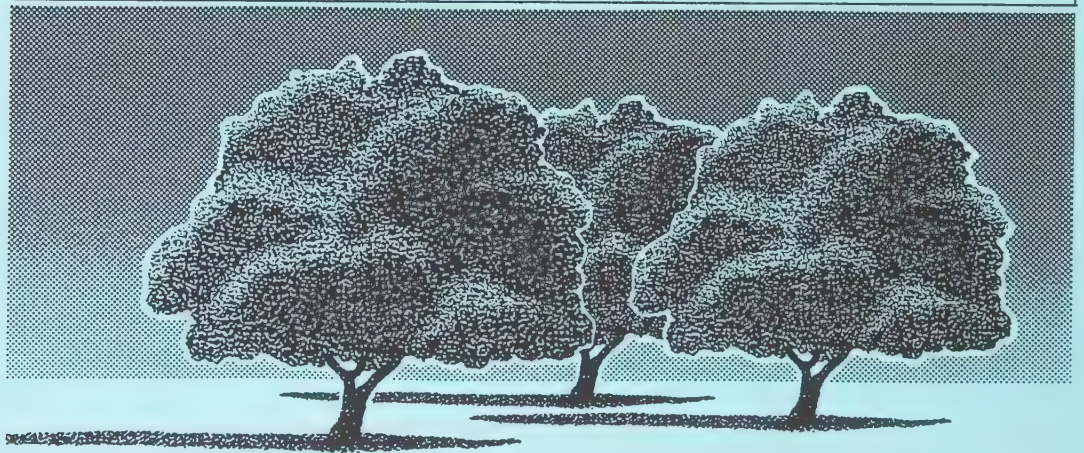
Open space areas which provide recreational opportunities in the City include equestrian trails and the multi-purpose (bicycle, hiking and equestrian) trail along the Pacific Electric Railroad right-of-way on Royal Oaks Drive. This trail connects to the San Gabriel River Trail further east. The Bradbury Flood Control Channel presents opportunities for future trail use. Other flood control facilities may serve alternatively as hiking/equestrian trails, and provide open space.

The Royal Oaks Elementary School has a play field which is available for use by residents. If the school is closed, it is recommended that residential structures not be constructed, but that the land be retained for future recreation/open space use. The City's population of approximately 850 residents does not make the development of parks and recreational facilities feasible. The lower density character of the City, the availability of recreational facilities in adjacent cities and the Angeles National Forest on the north also precludes the need for park facilities in the City. At the same time, private homes have recreational facilities such as swimming pools, tennis courts, play yards, etc. Also, none of the vacant parcels in the City are maintained in a state which could be considered to constitute a natural or recreational amenity.

The extensive open space areas in the City (hillsides, orchards, debris basins, individual property yards and gardens, school grounds, and other vacant land) provide the City of Bradbury with its rural character and physical beauty. Together with the low density developments, extensive views of the mountains and valleys are available in the City.



## Conservation Element







## SECTION 5: CONSERVATION ELEMENT

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### INTRODUCTION TO THE CONSERVATION ELEMENT

The Conservation Element of the Bradbury General Plan emphasizes the conservation, development and utilization of resources located within the City of Bradbury. The Element is designed to protect and maintain the City's natural and cultural resources, and to prevent their wasteful exploitation and destruction.

Issues regarding natural resources must be addressed in the City's conservation element, as mandated in Government Code Section 65302(d):

*"The general plan shall include a conservation element for the conservation, development, and utilization of natural resources, including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources."*

The major goal of the Conservation Element is directed at the restoration and protection of the quality of the physical environment, through the conservation of natural water courses, soils, and native plant and animal life. The Conservation Element overlaps and supports policies found in the City's Land Use, Safety, Open Space, and Circulation elements. Conservation of natural resources should be a leading determinant for development type and density, as well as for the preservation of open space.

### OVERVIEW OF CONSERVATION ELEMENT ISSUES

The natural resources in the City of Bradbury include soils, water; biotic resources; cultural resources; and energy.

#### *Soil Resources*

The City of Bradbury is underlain by three soil types: (1) the Vista-Amargosa Association, located in the northern-third of the City; (2) the Ramona-Placentia Association, located in the central-third of the City; and (3) the Hanford Association, located in the southern-third of the City.

The soils of the *Vista-Amargosa Association* occur in steep mountainous areas at elevations ranging from 1,300 to 3,900 feet above mean sea level (amsl). The average annual rainfall is 14 to 18 inches, mean annual air temperature is 61°F to 62°F, and the frost-free season ranges from 210 to 250 days. Natural vegetation consists mainly of annual grasses and forbs, but California juniper and manzanita grow in some places. Vista soils are 28 to 38 inches deep, are well drained, and have moderately rapid subsoil permeability. They have a brown, slightly acid, coarse sandy loam surface layer about 16 inches thick. The subsoil is brown, neutral, sandy loam about 12 inches thick and contains 2 or 3 percent more clay than the surface layer. Below is yellowish-brown,

neutral, coarse sandy loam on hard granite rock. Available water-holding capacity is 2.5 to 3.5 inches for 28 to 38 inches of soil depth. Inherent fertility is low. Amargosa soils are 14 to 20 inches deep, are excessively drained, and have moderately rapid subsoil permeability. They have a brown and yellowish-brown, slightly acid coarse sandy loam surface layer which is about 13 inches thick. Below is a yellowish-brown slightly acid gravelly sandy loam layer, containing about 20 percent by volume gravel, and resting on hard granitic rock of about 14 to 20 inches. Sheet and rill erosion have been moderate on these soils, removing from 25 to 40 percent of the original surface soil. Rock outcrops cover from 2 to 10 percent of the surface and many areas are cut by shallow gullies. Available water-holding capacity is 1.0 to 1.5 inches for 14 to 20 inches of soil depth. Inherent fertility is very low. These soils are used for range, wildlife and watershed.

The soils of the *Ramona-Placentia Association* occur on strongly sloping and rolling terraces between elevations of near sea level to 3,900 feet amsl. The average annual rainfall is 9 to 18 inches, mean annual air temperature is 62°F to 64°F, and the frost-free season ranges from 210 to 365 days. Natural vegetation consists mainly of annual grasses and forbs with occasional California junipers. Ramona and Placentia soils of this association occur on steeper slopes and are eroded. Gullies are common and about 50 percent of the original surface soil has been removed by erosion. The available water-holding capacity of Ramona soils is about 7.0 to 9.0 inches for 60 inches of rooting depth. Inherent fertility is low. The available water-holding capacity of Placentia soils is about 1.0 to 1.5 inches for 9 inches of soil depth. These soils are used for residential purposes, and for irrigated orchards.

The soils of the *Hanford Association* occur on gently sloping alluvial fans between elevations of near sea level to 3,500 feet amsl. The average annual rainfall is 9 to 18 inches, mean annual air temperature is 62°, and the frost-free season ranges from 220 to 330 days. Natural vegetation consists mainly of annual grasses and forbs and, occasionally, junipers. Hanford soils are over 60 inches deep, are well drained, and have moderately rapid subsoil permeability. They have pale-brown coarse sandy loam surface layer about 8 inches thick underlain by light yellowish-brown coarse sandy loam and gravelly loamy coarse sand substratum. Typically, they are slightly acid to mildly alkaline throughout, but occasionally are calcareous in the lower part. Thin layers of coarser material may occur below 40 inches. Available water-holding capacity is 5.0 to 7.5 inches for 60 inches of soil depth. Inherent fertility is moderate. Hanford soils make up about 85 percent of the Association, with 10 percent Yolo soils and 5 percent Hesperia soils.

In the Los Angeles basin, these soils are used almost exclusively for residential and industrial purposes. These soils will also support irrigated crops such as alfalfa, small grain, sugar beets, potatoes, and fruit and nut trees.



## Water Resources

The importance of water as a resource must be approached in terms of its quality and quantity, sources of supply, uses and demands, and the potential for its depletion or contamination, as well as its sustainability. Local groundwater resources in the City are not utilized for domestic consumption. The California-American Water Company provides potable (drinking) water to the City of Bradbury through groundwater wells in the City of Duarte. The existing distribution system is a dual system consisting of a domestic system and a landscape irrigation system. Pipe sizes and types vary widely from 4-inch to 12-inch and include asphalt concrete (AC), PVC, and STL. The reservoirs that serve the City are indicated in Table 5-1.

**TABLE 5-1  
WATER RESERVOIRS**

Name	Capacity (gallons)	Elevation (MSL)
Bliss Canyon	300,000	1040
Fair Oaks	450,000	873.4
Lemon	1,500,000	--
Lemon Irrigation	4,000,000	--
High Mesa	280,000	1200

Source: California-American Water Company, 1993.

In 1992, there were 386 water customers in the City of Bradbury. Average day demand is approximately 1,745 gallons per account per day, which equates to 1.97 acre-feet per customer per year. Maximum day demand is estimated to be 3,273 gallons per customer. This is equal to the average maximum day demand of 2,617 gallons per customer, plus two standard deviations. The peak hour factor is assumed to be 1.7.

The Federal Safe Drinking Water Act of 1974 and its 1986 amendments are intended to ensure the quality of our water supplies. The Federal Government, through the U.S. Environmental Protection Agency (EPA), sets standards and monitoring requirements for water utilities. California, through its Environmental Protection Agency, has the option of adopting the Federal standards or setting more stringent ones. These standards are set after considerable research and data gathering, as well as analysis by health experts. There are over 70 standards in California for constituents that may be found in drinking water, and more standards are expected in the next few years.

Testing of the domestic water supply is performed by the California-American Water Company for various constituents, substances and physical agents which the federal or state government has determined allowable maximum contaminant levels (MCL). The water company provides water both for irrigation and domestic use. The California-American Water Company works very hard to ensure the safety and quality of the water delivered to its customers. To reach that goal, they

perform extensive laboratory tests throughout the year. A composite of the analyses completed during 1992 indicates that water quality meets state and federal standards.

Recent legislation (AB 455) amends Government Code Section 65352 and adds Section 65958 to provide that planning agencies adopting or amending a General Plan shall refer the proposed action, not only to agencies previously designated, but also to public water systems with 3,000 or more service connections. It also provides a standardized process for determining the adequacy of existing and planned future water supplies to meet existing and planned future demands so that projects resulting in increased demands on water supplies can be accommodated.

### *Biological Resources*

The City of Bradbury is at the foot of the San Gabriel Mountains, which are vegetated with natural trees and shrubs. The native vegetation and wildlife is typical of steep, hilly chaparral and sage-scrub, transected by riparian (streamside) woodland. The majority of the vegetation in the northern portion of the City is undisturbed. The southern portion of the community has been disturbed by previous farming and development activities.

The types of natural vegetation that can be expected in the area include coastal scrub, chaparral, Oak woodland, and riparian woodland. Characteristic plants of the coastal scrub community include California Wormwood or Sagebrush, White Sage, Black Sage, Encelia, Yerba Santa, Eriophyllum, California Buckwheat, Lemonade-berry, Prickly Pears, and Our Lord's Candle. Chaparral is the best developed of the southern California plant communities, with dense cover of shrubs up to 15 feet high in some foothills. It includes a great diversity of evergreen shrubs, often with thick, leathery leaves. Many of the shrubs have fire-resistant seeds that sprout quickly from roots after fires. Characteristic plants include Chamise, Scrub Oak, Foothill Ash, Hard Tack, wild lilacs, Holly-leaf Cherry, Bear Brush, manzanitas, Toyon and Sugarbush.

Southern Oak, or Foothill Woodlands, can contain trees 15-75 feet high, with scattered shrubs and grassland. Characteristic plants of this community include Big-cone Spruce, Digger Pine, Juniper, Black Walnut, Coast Live Oak, Engelmann Oak, and Interior Live Oak. Shrubs associated with this community include gooseberry, Sugar Bush, Wild Oats and Wild Mountain Sunflower. The Oak Woodland is a rapidly disappearing plant community, however, none of the identified species are considered rare or endangered.

The riparian plant community typically includes Spruce, White Alder, Bigleaf Maple, Western Sycamore, Black Cottonwood and willows. Various ruderal or weedy plant species are found in disturbed areas. While this vegetation is of little aesthetic value and not considered to be biologically unique, it serves as a food source for seed-eating birds and mammals.

Animal species known to occur in the locale include a variety of mammals, birds, reptiles and invertebrates. Most prevalent among the mammals are deer, coyote, raccoon, skunk, rabbits,



mice, rats, opossums and squirrels. Typical birds include varieties of scrub jay, Hummingbird, warbler, Wren and Sparrow. Typical reptiles found in hillside areas include lizards, rattlesnakes and garter snakes.

Sensitive biological resources are defined as species under study for classification as threatened, endangered, or rare, or have low population densities or a highly restricted range. Sensitive species known to occur along the southern face of the San Gabriel Mountains include Brauton's milk vetch (*Astragalus brauntonii*), San Gabriel bedstraw (*Galium grande*) and lily (*Brodiaea filifolis*).

### *Cultural Resources*

Cultural resources can be regarded as symbols of a people and their civilization, and can represent human activity in pre-history, as well as the present. Cultural resources can provide a sense of place, history, and pride for residents of a region. The Los Angeles Basin has a rich cultural history that dates back to the early settlements by American Indians. The Gabrielino Indians, also known as the Tongva, occupied an extensive region stretching from the San Gabriel Mountains to the coast.

The City of Bradbury lies within the northern part of the historic Rancho Azusa de Duarte, which extended from the San Gabriel River on the east, to Monrovia on the west. The land was developed and subdivided in the late 1800's by later owners from Alexander Well to William Wolfskill. They planted the first commercial orange and citrus groves in California. Other owners include the Bradbury family, the Meyers, the John Scott family, the Fowler family, the Spinks family, the Fitzgerald family, and other early residents, all of whom loved the beauty of the area and planned to maintain it as a rural community of ranches and large homesteads, free from the usual cramped developments lining many of the hillsides in Southern California.

The early residents soon discovered the unique characteristics of the soil, water and warmth of the foothill thermal belt, permitting the growing of the finest citrus and avocados anywhere in the world. Important varieties of plants were developed or introduced in this area. These plants include the Meyer Lemon, the Fuerte and Bacon Avocados, the improved Washington Naval Orange, the Gast Hibiscus, the Cycads and the Deodar.

The first Bradbury City Council members were Rollin Eckis, who was Executive Vice President of Richfield Oil at the time (he became President in 1962, prior to Richfield becoming part of ARCO), Jack Martin Roth, Arthur W. Beaucaire, Cliff Poindexter, and E. M. Mazzei. Rollin Eckis, a highly respected research geologist, was elected Mayor. Eckis had published the most comprehensive analyses of the geology and groundwater, which remain today, as the most definitive technical reference for this region.



### ***Energy Resources***

While there are no known energy resources in the City, existing land uses and residents consume energy in a variety of ways. This includes the uses of energy for transportation, space heating and cooling, water heating, and lighting. Less obvious, but equally important, is the energy embodied in the materials and foods consumed by City residents on a daily basis.

All traditional energy resources consumed by land uses of the City are imported. There are no wells producing oil or natural gas, coal deposits, generating stations, or refineries or processing facilities within the City of Bradbury. Natural gas is imported by the Southern California Gas Company ("Gas Company"), from its interstate system. Electrical energy is accessed by transmission and distribution lines from substations owned by the Southern California Edison Company.

### **CONSERVATION PLAN**

The Conservation Plan for Bradbury establishes standards to ensure the protection of natural and cultural resources in the City. These include water conservation measures, biological resource protection, cultural resource preservation, and energy conservation practices.

### ***Water Conservation***

The Water Conservation in Landscaping Act (AB 325; Government Code Sections 65591-65597) requires all California cities to adopt a local Water Efficient Landscape Ordinance, or to adopt the State's Model Ordinance. The State Model Ordinance automatically went into effect January 1, 1993. As stated in the Act, the purposes of the ordinance are:

- To promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible;
- To establish a structure for designing, installing, and maintaining water efficient landscapes in new projects; and
- To establish provisions for water management practices and water waste prevention for established landscapes.

The model ordinance includes provisions for new or rehabilitated landscapes, and for existing landscapes; and includes examples of water conservation concept statements, methods to calculate water use and water allowance, and design criteria, schedules and technical data. The City adopted this ordinance and coordinates water conservation programs with the California-American Water Company.

### ***Wildlife Enhancement***

For planning purposes, three sensitivity categories have been developed to identify the planning area's sensitivity for the presence of special plants and animals. The sensitivity rating is described as follows:

***Low Sensitivity:*** Areas with no significant natural habitats are included in this classification. Past development in the urbanized areas is likely to have destroyed or significantly altered native plant communities and animal habitats. This designation is not intended to undervalue the importance of introduced or existing vegetation in the developed areas.

***Moderate Sensitivity:*** A number of areas in the City have been developed at densities sufficiently low so that remnants of environmentally significant habitats remain. In addition, some development is located adjacent to ecologically significant zones, which could be adversely impacted by any increase in density or intensity of development.

***High Sensitivity:*** The hillside areas are considered ecologically significant due to their vacant state and the presence of native vegetation. These areas have a high sensitivity for the presence of important biological resources. Measures should be observed to prevent disturbance or destruction of existing habitats.

Development proposals within areas with a high sensitivity rating (shown in Exhibit 5-1) will be reviewed to determine the extent of significant ecological resources on the property and the potential impacts new development will have on these resources. The following guidelines shall be followed:

- Field surveys to identify potential resources must be undertaken prior to any development or significant alteration of these areas.
- Any fuel modification landscaping related to fire prevention must be evaluated by knowledgeable professionals to ensure appropriate mitigation is followed.
- All new development in these areas must undergo appropriate environmental review pursuant to the California Environmental Quality Act.
- Trustee agencies including the California Department of Fish and Game and local environmental organizations such as the Audubon Society must be notified of large scale development proposals as part of the environmental review process.
- When threatened and/or endangered species are encountered, the directives of the Department of Interior and the State of California Department of Fish and Game will be considered.



In order to protect native plant and animal species in the area, the City shall require that a survey of on-site vegetation be conducted for all projects subject to development review procedures. The survey shall identify existing mature and specimen trees and other significant vegetation. Where such landscape is identified, City staff will work with the developer to determine the means by which such landscape may be integrated with the proposed project and preserved. A variance from the site development standards may be considered to preserve the vegetation, if any adverse impacts of such a variance can be mitigated. Projects that would affect sensitive habitats and animal species or wetland areas shall be made to comply with the regulations of the State Department of Fish and Game and the U.S Army Corps of Engineers.

### *Cultural Resources Preservation*

Cultural resources in the City shall be preserved to the feasible extent possible. The City will establish and maintain a register of any significant historical, architectural, and cultural resources that are discovered. As part of the City's planning process, guidelines will be implemented for the protection and preservation of any archaeological resources. For new developments, an archaeological survey may be required either prior to or during any earth moving activities, as dictated by the specific project site conditions.

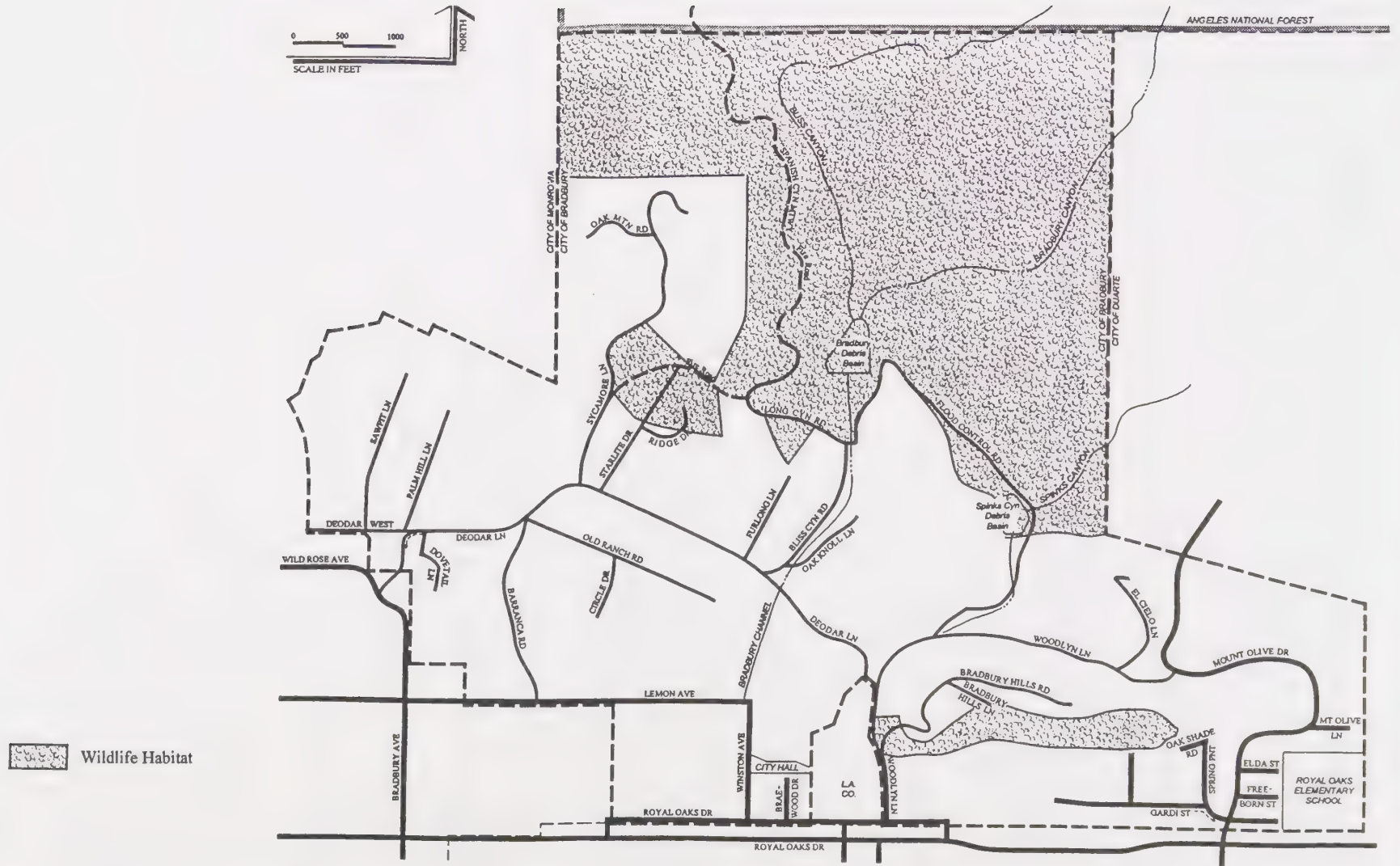
Cultural resource management and historic preservation require the cooperation of many government agencies. Bradbury alone, however, has the ability to preserve and enhance many of the City's cultural resources. Furthermore, it is the City's desire to establish facilities and programs which will inspire appreciation for the City's past and will encourage participation in a wide range of educational and social activities.

Protection of cultural resources is afforded through the California Environmental Quality Act, which requires that a project be considered "significant" in terms of impact if it will disrupt or adversely affect a site of archaeological, paleontological, or historical significance. Protection of these resources during construction activities generally involves the salvage and curation of materials discovered at the site. Future development within the planning area and surrounding region is certain to result in the discovery of new sites. Other sites will also undoubtedly be discovered through the efforts of future archaeological field surveys.

Any proposed project that involves a significant amount of grading should have an archaeological survey conducted prior to construction. In addition, archaeological resources may be discovered in the course of construction and appropriate measures must be taken to ensure that artifacts are recorded and salvaged. The City of Bradbury will seek to avoid damaging effects on archaeological resources whenever feasible. If avoidance is not feasible, the importance of the site shall be evaluated according to the following criteria.

- The site's association with an event or person of recognized significance in California or American history, or scientific importance in prehistory.







- The site's ability to provide information which is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable or archaeological research questions.
- The site's special or particular qualities such as oldest, best example, largest, or last surviving example of its kind.
- The site's age being at least 100 years old and its stratigraphic integrity.
- The site's potential for answering important research questions that historical research has shown can be answered only with archaeological methods.

Avoiding damage to significant archaeological sites may be accomplished by any of the following approaches:

- Planning construction to miss archaeological sites;
- Planning parks, greenspace, or other open space to incorporate archaeological sites;
- "Capping" or covering archaeological sites with a layer of soil before building tennis courts, parking lots, or similar facilities. Capping may be used where the soils to be covered will not suffer serious compaction; the covering materials are not chemically active; the site is one in which the natural processes of deterioration have been effectively arrested; and the site has been recorded.
- Deeding archaeological sites into permanent conservation easements.

Guidelines for preserving potential archaeological resources in the community shall include:

- An archaeological report must be provided to the City's environmental coordinator documenting known or suspected sites as part of the environmental review.
- An archaeologist must be present during excavation or grading as part of the mitigation monitoring program.
- All procedures related to the excavation and disposal of resources must comply with Appendix K of the CEQA and CEQA Guidelines.

California State Assembly Bill AB 492 and the adoption of the Appendix K in the CEQA Law and Guidelines provide direction with regard to the mitigation, preservation, or salvage of significant archaeologic resources that are affected by development. The City will comply with the following provisions of CEQA in the event a significant archaeological site is discovered.



- An excavation plan will be prepared according to the requirements outlined in CEQA Appendix K;
- If it is impossible to avoid disturbing the site through revisions in project design, the Lead Agency will initiate salvage efforts according to the parameters outlined in Appendix K, Section VII of the CEQA Law and Guidelines.
- In the event of the discovery of human remains, procedures outlined in Section VIII of Appendix K contained in the CEQA Law and Guidelines will apply.

### *Energy Conservation*

Energy conservation is important in preserving non-renewable energy resources to ensure that these resources are available to future generations. There are a number of benefits associated with energy conservation, such as improved air quality, reduction of energy costs, waste stream reduction, and water conservation. Non-renewable sources of energy are extremely limited, and have been wastefully consumed in the past. Sprawling urban development, which necessitates extensive automobile use, consumes vast quantities of oil and gasoline. Structures with large areas of exposed glass require extensive air conditioning in the summer and heating in the winter.

The Southern California Gas Company implements conservation programs annually for both the residential and commercial sectors. The residential rebate program is offered to residents, and provides rebates for the purchase of energy efficient appliances, and for the installation of insulation, weatherstripping, and duct wrap.

The Southern California Edison Company also offers residential and commercial conservation programs. The residential rebate program, for units heated by electricity only, provides rebates for the purchase of energy efficient refrigerators during the summer months, and for the purchase of horizontal access clothes washers. Rebates are also available for the replacement of existing electric heating/cooling units with more efficient models and for pre-approved, specific heat pumps, air conditioners, and water heaters. As with the Gas Company programs, consumers must coordinate with Edison Company to determine eligibility. The City will provide information to all residents and businesses on the conservation programs offered by the Gas Company and Edison Company.

The City will cooperate with Southern California Edison Company and the Gas Company to initiate and facilitate programs for energy audits of existing structures. The audits will define the current levels of use, compare these to current standards for similar types of structures, and prescribe corrective methods to improve energy conservation. The City will initiate programs which facilitate the retrofitting of existing buildings and required improvements; these may include technical assistance.

The City will incorporate, at a minimum, the following requirements in the City's Building Code:

- State requirements for the use of energy-efficient fixtures and energy saving design elements in new construction (Government Code Section 66473.1);
- Inclusion of windows that can be opened in all new construction, unless sealing is required for safety or other purposes considered acceptable by the City;
- Installation of specified energy conservation elements on transfer of ownership of an existing building.





## Safety Element





## SECTION 6: CITY OF BRADBURY SAFETY ELEMENT

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### INTRODUCTION TO THE SAFETY ELEMENT

The Bradbury General Plan Safety Element focuses on those issues that may affect the health and safety of City residents that should be considered in current and future planning. Specific issues include fire risk and prevention, flooding, geologic and seismic hazards, and other natural and man-made hazards that could affect the City. State law, in Government Code Section 65302(g), indicates that safety elements must:

*...provide for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence and other geologic hazards known to the legislative body; flooding; and wild land and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, peak load water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards.*

This Safety Element is the primary vehicle for relating local safety planning to the City's land use decisions. The City has established land use policies, standards, and designations based on the criteria set forth in the Safety Element. Additionally, local decisions related to zoning, subdivisions, and entitlement permits, for example, will be tied to the safety element's identification of hazards and hazard abatement provisions. The City of Bradbury Safety Element examines those issues related to protecting the community from any unreasonable risks associated with earthquakes, slope instability, flooding, and fire. The Element also indicates standards peak load water supply requirements; minimum road widths; and clearances around structures. Finally, the Safety Element indicates evacuation routes and emergency shelters.

The objective of the Safety Element is to enable the City to be sensitive to those natural and manmade hazards in future decision making and to be able to respond in a timely manner in the event of an emergency. As a result, the following guiding principal serves as the framework for the City of Bradbury Safety Element:

*Public safety will be the focus of a comprehensive emergency preparedness plan which will emphasize the risks associated with earthquakes, wildfire, flooding, and other manmade and natural risks.*

In response to the above principal, the Safety Element will provide the foundation for a detailed inventory of those risks that will need to be considered and provide the basis for a comprehensive emergency preparedness plan. The element also establishes standards related to public safety pursuant to State requirements.



## OVERVIEW OF SAFETY ELEMENT ISSUES

### *Public Safety Service Providers for the City of Bradbury*

The threat of fires in foothill areas in Southern California has been an area of concern for many years. Most fires, which result in urban damage or loss of life in recent fire seasons, have been man-made either through carelessness or arson. Bradbury has one advantage in fire protection not shared by other cities in the area. The mountainous regions of Bradbury, where fire hazard is the greatest, are restricted by roads which permit entry only to residents, guests and service related vehicles. This constitutes a significant advantage in protection against man-made fires.

Although some major insurance companies offer fire and earthquake insurance, many citizens are unaware of this fact. Those persons who are aware of its existence often feel that coverage restrictions and high deductible provisions make the protection unworthy of additional premium expenses.

Fire service is provided to the City by a Los Angeles County seven-man crew at Fire Station No. 44 located at 1105 Highland Avenue. The station has two captains, two engineers, three firefighters, two engines, one patrol and one water tender.

The City of Bradbury currently contracts law enforcement services from Los Angeles County. Although, crime rates in the City are relatively low, the prevention of criminal activity is a concern to the community. Statistics obtained from Los Angeles County Sheriff's Department indicate the City has experienced little crime compared to that common in the surrounding region. In the first quarter of 1993, for example, one report was made for a misdemeanor vehicle code violation, there was one reported theft, and one arrest made for aggravated assault. During fiscal year 1992-1993, there were 97 calls for service. During this period there were four *Part I crimes* (homicide, rape, assault, theft, etc.) and 13 *Part II crimes* (weapons violations, drunk driving, vandalism, disorderly conduct, etc.). A total of six arrests were made during the fiscal 1992-1993 year including three arrests for grand theft auto.

Bradbury residents are served by Santa Teresita Hospital located at Buena Vista and Royal Oaks in Duarte and the Methodist Hospital in Arcadia. The Santa Teresita Hospital provides 24-hour emergency services. Hospitals, offering a wide variety of medical services, rely on highly sophisticated and sensitive equipment for a number of life-maintenance functions. Fire or earthquake damage to such equipment would directly affect the safety and well being of present and future patient populations.

Facilities vital to post-disaster response efforts include fire control and law enforcement facilities, hospitals, and emergency operations control and communication centers. It is imperative such facilities be able to withstand the effects of a major disaster and remain fully functional. In this regard, factors warranting careful consideration include seismic design and construction

requirements, site location and accessibility, impacts resulting from damage to adjacent buildings, and the degree of usability of vital facilities following a major disaster.

### *Overview of Hazards Affecting the City of Bradbury*

Environmental hazards occurring in the City of Bradbury can be divided into two major categories: naturally occurring hazards and man-made hazards. Naturally occurring hazards include earthquakes, wild land fires, floods, and slope failure. Chemical contamination, structural and chemical fires, transportation accidents and air and water pollution are examples of man-made hazards.

### **Flood Risk**

The potential for flooding is generally described in terms of a statistically projected frequency. For example, a 100-year flood has a 1.0 percent chance of occurring in a given year, while a 500-year flood is one which has a 0.2 percent chance of happening in any year. A 500-year flood would be slightly deeper and cover a greater area than a 100-year flood.

The San Gabriel River Channel lies east of the City of Bradbury, and is designed to contain a 100-year flood. The Channel is fully operational and is maintained by the U.S. Army Corps of Engineers and the Los Angeles County Department of Public Works. The construction of San Gabriel River improvements in 1947 reduced the local area's risk of flooding. Los Angeles County Drainage Area studies performed by the Corps have shown no deficiencies along the San Gabriel River. The elevated nature of the City removes Bradbury from flood danger from the San Gabriel River.

Serious flooding has not been a recent problem in Bradbury because the low density residential development has permitted the retention of natural ground cover which retards serious floods. In addition to the natural ground cover, the Bradbury Debris Basin and the Spinks Debris Basin and check dams also provide the City with protection from large scale floods.

Minor problems concerning water runoff occurred in the past during wet years. These problems tend to be localized and primarily relate to very small mudslides and small erosion problems in areas where the natural grade has been disturbed. Much of the soil in Bradbury canyon areas is of an alluvium base material and is susceptible to runoff problems if the natural ground cover has been removed and not replaced with landscaping or other mitigating measures. The City maintains a policy of investigating any localized runoff or mudslide problems through the assistance of the Los Angeles County Engineers Office.



## Description of Regional Faults

Faults are typically classified as being *active*, *potentially active*, or *inactive*. Active faults are those that have exhibited movement within the past 10,000 years. The exact time limits for planning purposes are usually defined in relation to contemplated uses and structures. The locations of the regional faults are shown in Exhibit 6-1.

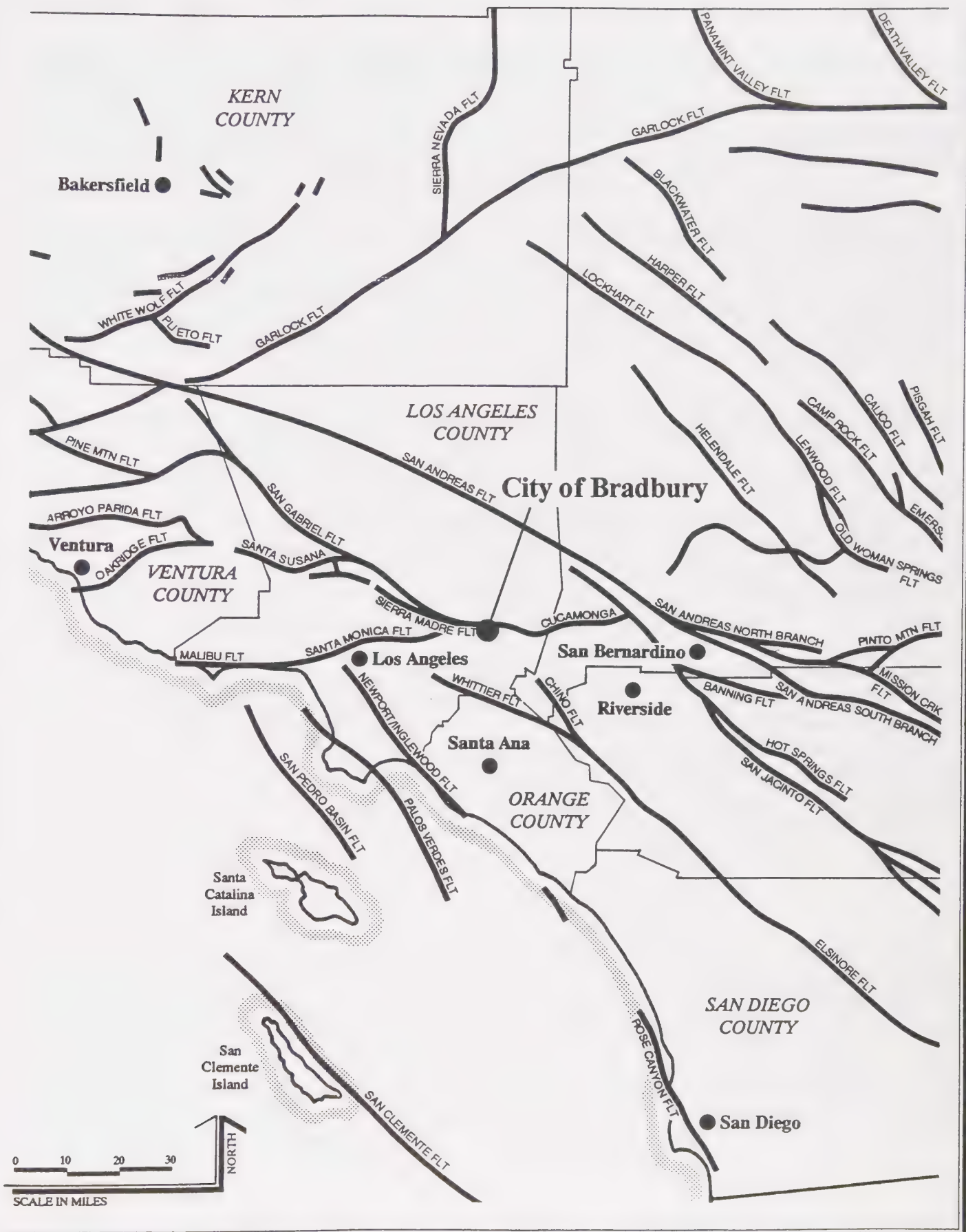
The *Newport-Inglewood Fault Zone* is approximately 29 miles south of the City of Bradbury. Numerous recent shocks greater than Magnitude 4.0 and also the historic Magnitude 6.3 Long Beach Earthquake on March 11, 1933, centered offshore near Newport Beach suggest an active seismic history. Although there has been no observed ground surface displacement associated with the Newport-Inglewood Fault Zone, there may have been subsurface fault displacement of approximately seven inches associated with the October 21, 1941, earthquake (Magnitude 4.9) and with the June 18, 1944, earthquake (Magnitude 4.5). This Fault Zone could generate a  $7.0 \pm$  Magnitude earthquake within the next 50-100 years.

The *Norwalk Fault* is approximately 15 miles south of the City of Bradbury. This fault strikes 65 to 85 degrees to the northwest and dips steeply to the northeast. The fault is noted as the possible source of a damaging earthquake (Magnitude 4.7) occurring on July 8, 1929 which caused significant damage in Whittier and Norwalk. The fault is approximately 16 miles long and has an accurate trace between Buena Park and Tustin. Microseismic activity along the Norwalk Fault is high and Richter (1958) suggests that the fault may be capable of generating a Magnitude 6.3 earthquake.

The *San Andreas Fault Zone* is located approximately 24 miles north of the City of Bradbury. This fault zone extends from the Gulf of California northward to the Cape Mendocino area where it continues northward along the ocean floor. The total length of the San Andreas Fault Zone is approximately 750 miles. The activity of the fault has been recorded during historic events, including the 1906 (Magnitude 8) event in San Francisco and the 1857 (Magnitude 7.9) event between Cholame and San Bernardino, where at least 250 miles of surface rupture occurred. These seismic events are among the most significant earthquakes in California history. The length of the fault and its active seismic history indicates that it has a very high potential for large-scale movement in the near future ( $8.0 \pm$ ), and should be considered important in land-use planning for most cities in California.

The *San Fernando Fault Zone* is approximately 20 miles northwest of the City of Bradbury. Fault segments that were demonstrably involved in the February 9, 1971 San Fernando Earthquake (Magnitude 6.4) are, for the most part, east-west trending thrust faults with associated left lateral movement. The ground surface ruptures occurred on little known pre-existing faults in an area of low seismicity and previously unknown historic ground displacement. The earthquake epicenter of the February 9, 1971 seismic event was near the community of Newhall. The recurrence interval for the San Fernando Fault Zone is estimated to be approximately 200 years.







The *Whittier-Elsinore Fault Zone* is approximately 12 miles south of the City of Bradbury. This northwest-trending fault tends from Whittier Narrows southeast across the Santa Ana River, past Lake Elsinore, into western Imperial County and then into Mexico. This fault zone has the expected maximum capability of a magnitude 6.6 earthquake.

The *San Gabriel Fault*, also a potentially active fault, is located approximately 12 miles north of the City of Bradbury. This fault extends from Frazier Park to Mount Baldy Village, a distance of approximately 84 miles. Because of its length and its ancestral relationship with the San Andreas Fault System, its potential future activity must be realized. Due to the length of its surface trace, the San Gabriel Fault is believed capable of generating a 7.8 Magnitude earthquake.

The City of Bradbury is located approximately 18 miles southeast of the *Santa Monica Fault*, also classified as a potentially active fault. No detailed information is available on the exact location of this southwest-northeast trending fault at the ground surface (fault trace), or on its geometric orientation. This fault, the Malibu Coast Fault, and the Raymond Fault belong to one large fault system. The San Fernando and Sierra Madre Fault Zones are also north-dipping mountain frontal thrust faults; therefore, comparisons of the Santa Monica, Raymond, Malibu Coast, Sierra Madre, and San Fernando Faults can be suggested. Experience from the 1971 San Fernando Earthquake indicates that the Santa Monica Fault could generate a moderate seismic event (Magnitude 6.6). This fault, consequently, is classified as potentially active.

The *Verdugo Fault* is approximately 12 miles west of the City of Bradbury. This potentially active fault bounds the south flank of the Verdugo Mountains, and appears to merge with the Eagle Rock-San Rafael Fault System in the vicinity of the Verdugo Wash. Low magnitude earthquakes (less than 3.0) which have been attributed to activity along the Verdugo Fault are occasionally recorded in the Burbank-Glendale area. No direct evidence of ground displacement has been observed associated with these low-magnitude seismic events (earthquakes). The Verdugo Fault has a high potential for future activity and is capable of generating a Magnitude 6.4 earthquake. It is not considered to have had seismic activity during historic time.

### **Description of Local Faults**

The City of Bradbury has two earthquake faults within the City limits (refer to Exhibit 6-2). The Sierra Madre Fault extends through the major portion of Bradbury along the base of the San Gabriel Mountains. This fault is clearly exposed in some areas of the San Gabriel Valley, with a reverse movement. The Duarte Fault extends across the southern portion of Bradbury and bisects an unincorporated County island. The existence of the Duarte Fault is determined by a groundwater barrier which could be a possible extension of the Sierra Madre Fault Zone to the north. The Duarte fault is a buried fault in the Bradbury area and will require additional study to determine the exact location.



The City of Bradbury is bisected by the *Sierra Madre Fault Zone*. This fault zone is a series of *en echelon* moderate angle, north-dipping, reverse faults (thrust faults). Movement along these frontal faults has resulted in the uplift of the San Gabriel Mountains. Seismic activity is expected to be a maximum of 7.2 magnitude.

The 5.8 magnitude Sierra Madre earthquake of June 28, 1991, occurred 11 miles northeast of Pasadena at a depth of 7 miles under the San Gabriel Mountains of the Central Transverse Ranges. The event (Hauksson) appears to have occurred on the Clamshell-Sawpit Fault, an offshoot of the Sierra Madre Fault Zone. The main shock was followed by an aftershock sequence with 103 recorded aftershocks at a .6 magnitude and 29 aftershocks greater than 1.5 magnitude. The Sierra Madre Fault Zone follows the base of the mountains from Cajon Pass to San Fernando in a series of arcuate, 9-15.5 mile, long fault segments.

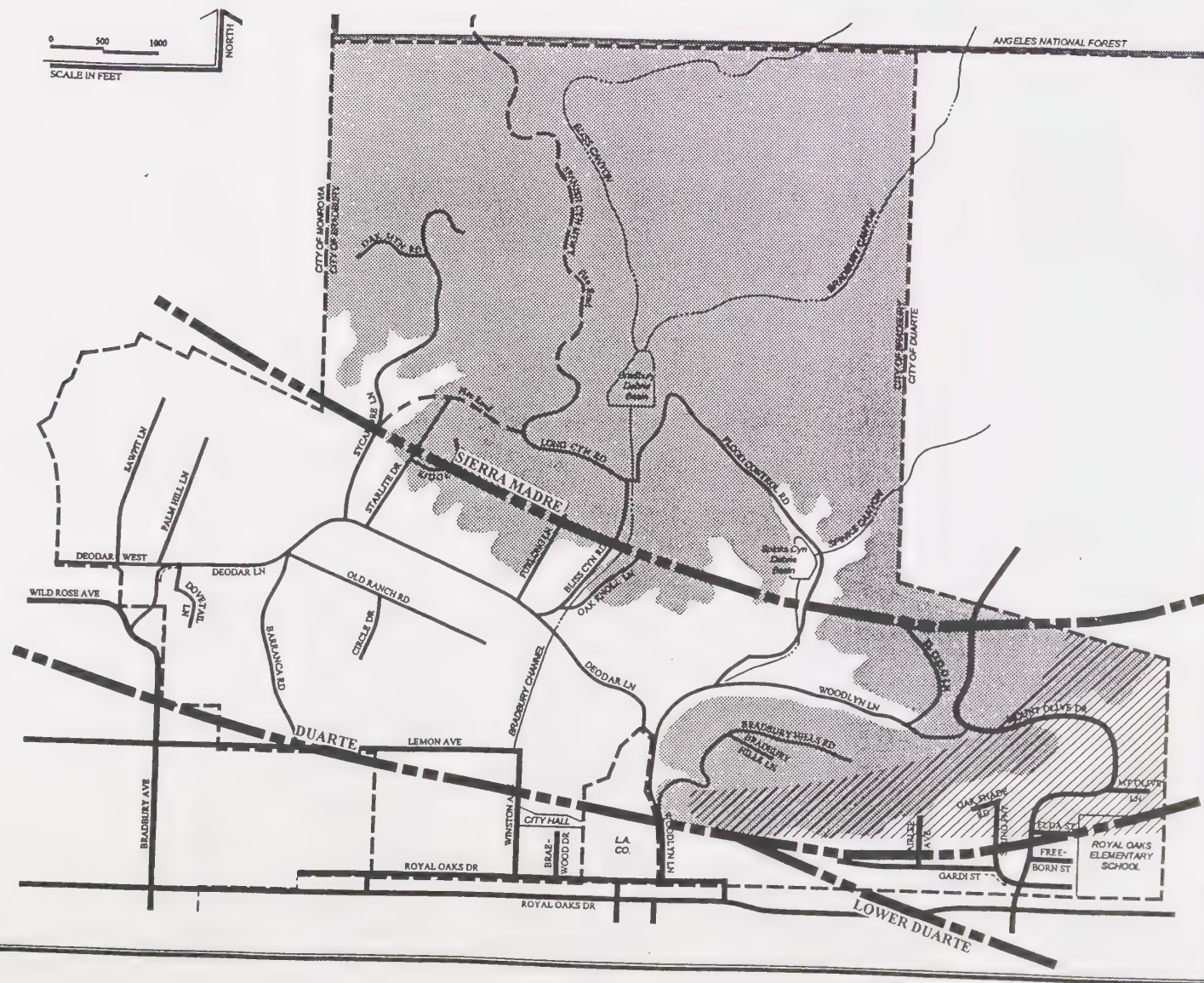
The *Raymond Hill Fault* is approximately 1.5 miles west of the City of Bradbury. The northeast-southwest trending Raymond-Hill Fault Zone has a length of approximately 16 miles, width of 0.25 miles, and consists of one to three strands which diverge from the foothills of the San Gabriel Mountains in Sierra Madre to the Adams Hill area of Glendale. The sense of movement on the fault is reverse left-oblique. The fault serves as a ground water barrier and is coincident with an obvious topographic scarp along much of its extent between Monrovia Canyon and Arroyo Seco. Geologic evidence suggests there has been a minimum of 222 feet of vertical displacement along a portion of the fault near Raymond Hill since Miocene Time, and that clay gouge along the fault within the alluvium serves as an aquiclude. Age dating of soil material which fills cracks probably caused by the latest movement of this fault suggests that the fault moved approximately 3,000 years ago. The maximum credible earthquake expected from the Raymond-Hill Fault is Magnitude 6.8, if the entire 16-mile length of the fault were to break.

### Seismic Affects

Damage from seismic events are due to four basic characteristics of fault movement which include ground shaking, surface faulting, ground failure, and seismic sea waves and seiches.

*Ground shaking* is probably the most damaging result of an earthquake, because of the large areas subject to shaking. The 1906 San Francisco earthquake is an example of this effect with an 8.3 magnitude felt over 375,000 square miles. Strong motion lasting a few seconds in a moderate earthquake to as much as four minutes in a great earthquake is exaggerated on loose, water-saturated ground, and less on solid rock. The parameters for ground shaking have been described above.

Various types of ground failures accompany earthquakes. These include landslides; fracturing, cracking, and fissuring; liquefaction of sand layers; compaction, subsidence, uplift and tilting. Mass movements of loose rock, soil, and water-saturated, weathered materials are major effects in all earthquakes large enough to be felt. These consist of landslides, rock avalanches, rock falls,







mud and debris flows and all types of gravitational movements from very minor to extremely large. Steep slopes favor such mass movements, and slides in highway cuts and downhill road shoulders are common after earthquakes.

Bradbury has not experienced measurable ground failure due to an earthquake in recent times. However, a potential for damage due to ground failure is still present. The development of habitable structures in an area where ground failure is possible, due to seismic action of landslide, may require detailed engineering studies and soil investigations based upon extensive subsurface exploration and laboratory testing. In cases where plans are submitted for habitable structures within the fault study zone, the applicant may be required to furnish engineering investigation reports, which should include, but not be limited to, the following considerations: fault proximity; characteristics of foundation materials; ground failure potential; estimated earthquake parameters of bedrock motion; and ground motion spectrum.

A great deal of knowledge is not yet available about the Duarte and Sierra Madre Faults in the City of Bradbury, and until such time as additional findings are uncovered about the faults, a fault study zone of 660 feet, on either side of the faults, should be established. This study-zone boundary may be increased or reduced in size as more facts are uncovered about the Sierra Madre and Duarte Faults. Construction of habitable structures within 50 feet of a known fault, or a known fault trace, must be closely regulated.

Compaction of loose soils and poorly consolidated alluvium occur as a result of strong seismic shaking. Occurrences of this mode of ground failure are patterned irregularly and are controlled in part by bedrock surfaces and mode of deposition (stream beds, swamps, old lakes, etc.). Amounts of compaction may vary from a few inches to several feet and may be significant in areas of thick soil cover.

*Seiches*, or periodic oscillations ("sloshing") of bodies of water such as ponds, lakes, and bays, usually occur in moderate to great earthquakes. Seiches may raise and lower a water surface from a few inches to several feet, and may occur several thousand miles away from the earthquake epicenter.

## SAFETY ELEMENT/EMERGENCY PREPAREDNESS PLAN

### *The Safety Element's Relationship to Land Use Planning*

The two existing emergency response plans, the Los Angeles County *Disaster Relief Manual* and *Basic Emergency Operations Plan*, provide the tools to coordinate the disaster recovery operations of County fire control and law enforcement agencies with local agencies and governments. The City currently has a number of ordinances, programs and requirements already in existence pertaining to seismic and fire hazards. Primary among these are the subdivision and building permit approval requirements for seismic strengthening and adequate access.

The State Office of Emergency Services has established three levels of emergency response to peacetime emergencies, which are based on the severity of the situation and the availability of local resources in responding to that emergency. The three levels of emergency response include:

- **Level 1:** A minor-to-moderate incident wherein local resources are adequate in dealing with the current emergency.
- **Level 2:** A moderate-to-severe emergency where local resources are not adequate in dealing with the emergency and mutual assistance would be required on a regional or statewide basis.
- **Level 3:** A major disaster where local resources are overwhelmed by the magnitude of the disaster and State and federal assistance are required.

Each potential hazard to the public safety has been assessed according to the following levels of risk:

- **Low Risk** - The level of risk below which no specific action is deemed necessary. The occurrence of a specific event is unlikely;
- **Medium Risk** - The level of risk above which specific action is required to protect life and property, though the probability of the event taking place is low to moderate;
- **High Risk** - Risk levels are significant and occurrence of a particular emergency situation is highly probable or inevitable.

The *scope of risk* refers to the geographic area that could be potentially affected with the occurrence of one of the hazards. The scope of risk also includes three levels:

- **Local** - The affected geographic area that is directly affected is localized or site specific;
- **Citywide** - The affected area includes a significant portion or all of the City;
- **Regional** - The affected area includes the entire City as well as the surrounding region.

By 2010, it is projected that a population of approximately 979 people will reside in Bradbury. Seismic and fire hazards affecting existing populations in the City may, in some instances, apply to over 147 new residents as well. However, the susceptibility of additional population and growth is more directly related to necessary expansion of existing residential uses.



The low-density character of Bradbury has been mentioned as a positive factor in terms of general safety. Any incremental intensification of existing residential uses may, to some degree, increase susceptibility to fire and/or seismic events. The expansion of urban uses is preceded by, or accomplished in conjunction with, the expansion of infrastructure, and the provisions of a wide range of vital services and facilities. Location of these services, facilities, and systems will most certainly be influenced by factors other than optimal safety considerations.

### *Evacuation Routes and Emergency Shelters*

Exhibit 6-3 indicates the evacuation routes in the City and those facilities that will serve as collection/information centers. The plan does not apply to normal day-to-day emergencies and the well-established and routine procedures used in coping with such emergencies. In the event of a serious hazard which would require the evacuation of Bradbury residents, the following streets would be used as primary evacuation routes:

- Mount Olive Drive, with an alternate route on Woodlyn Lane;
- Woodlyn Lane (gates will be opened to permit exits at either end); and
- Deodar Lane (gates at Barranca, Woodlyn Lane, and fire control road will be opened to permit exits).

Evacuation would be handled by safety personnel from Los Angeles County under contract to the City (i.e., Fire, Sheriff, etc.).

In a major disaster, mutual aid sources in adjacent jurisdictions are likely to be fully committed to their own needs, and there may be substantial delays in the request and transport of assistance from more distant locations. Ingress to and egress from the City is likely to be inhibited by damage caused by the disaster and related congestion and accidents.

Effective disaster preparedness will require the concerted efforts of City agencies and residents. Not only must effective plans and procedures be in effect, but those plans should be tested and improved through frequent disaster exercises.

The School District currently has a disaster plan which varies from resuming classes and sending children home on regular bus routes to holding children in school yards for parent pickup. The specific post-disaster action depends on the extent of area damage.



Exhibit 6-3 indicates those areas of the City that are subject to a potential development constraint. These constraints include wildfire, slope stability, faulting, and other natural hazards. The potential for wildfire presents the single greatest risk to development and residents. Those areas indicated in Exhibit 6-3 require special consideration and study prior to development (properties not included in the Safety Management Overlay may also be subject to certain requirements also).

### *Safety Standards*

Two seismic zones have been distinguished in this study to classify areas believed to have varying seismic response within the City. They are: 1) possible ground rupture; and 2) probable ground shaking only.

- **Surface Rupture Zone.** The area of possible ground rupture is shown on Exhibit 6-3. These areas may result in ground displacement during a seismic event, and therefore should require geologic-seismic and soils reports for proposed structures. If investigations are prepared for facilities, they should demonstrate the geotechnical feasibility of the proposed site and should comment on the potential for ground rupture at the site.
- **Ground Shaking Zone.** The City of Bradbury is underlain by the Duarte and Sierra Madre Faults and will therefore have a very local impact within the City in the event of seismic activity. In addition to ground rupture, a geologic/seismic and soils report should be required for all critical facilities and structures located within the fault zone which comments on the intensity of ground shaking.

The Safety Plan recognizes the presence of a number of natural hazards in the City (as identified in the Element). These hazards include the Sierra Madre and Duarte faults, flood hazards, and wildfire hazards. In order to provide increased protection for development in hazard zones, the following standards should be followed:

- Geologic investigations should be performed for projects within one-half mile of the Duarte and Sierra Madre fault traces. Buildings should be located away from the fault, as much as possible. Investigations should also be performed for development on potential landslide areas.
- Areas with slopes greater than 20 percent should be subject to engineering design methods to achieve adequate foundation support.
- Exposed slopes should be landscaped immediately after grading, to prevent erosion.

- Projects within or near identified flood hazard areas should be constructed to withstand flood waters at a capacity of the 100-year flood or should include storm drain improvements to eliminate potential flooding.
- Projects planned in areas with dry brush, steep slopes, or limited access should use fire-resistive building materials and landscaping and other fire safety measures.
- Water lines and utilities infrastructure in hazard zones should be designed with a higher safety factor.
- Structures are not permitted to have wood-shake roofs.

### *Access Roadways*

The provision of adequate roadway widths will facilitate emergency response during a disaster. The City supports fire access standards that have been established by the County Fire Department to ensure access for firefighting equipment to all areas of the City. These standards will continue to be adhered to through the implementation of the General Plan.

### *Fireflow Standards*

The water system must be capable of supplying adequate quantities of water for firefighting purposes. This is in addition to the daily supply for domestic demand in the area. Adequate reservoir capacity is determined by the availability of water for peak day supply plus fireflow requirements. Generally, peak day supply is twice the average day demand and total fireflow requirements are estimated by the population of the area. For Bradbury, required fireflow is approximately 8,200 gallons per minute for at least 10 hours, or emergency reservoir capacity of five million gallons. The water department that serves the City (California American) will continue to regularly review the system's adequacy and reliability to meet daily and emergency demands.

To ensure emergency water supply throughout the City, new construction is required to meet specific fireflow standards. Fireflows for individual structures are calculated according to size of the structure (floor area), type of construction (wood, non-combustible, fire-resistive), building height, availability of sprinkler systems, distance between buildings, and type of occupancy. Guidelines for estimating the required fireflow are available at the County Fire Department. The Department's Fire Prevention Bureau determines the minimum flows for new construction based on building plans. Developers are responsible for providing adequate fireflows. This process ensures that hydrant capacity is available to meet fire emergency needs of all developments.



### *Response Times*

To minimize the injury and damage that may be caused by accidents and disasters, the City of Bradbury has established the following standards for response times:

- Emergency calls should have a response time of between three to five minutes or less in urban areas. In the more rural areas of Bradbury, response times should not be less than ten minutes.
- Non-emergency calls should have a response time of 5 to 30 minutes.

The three-minute standard is used for life and death situations where injury has caused heart failure or stoppage of breathing. It takes three minutes to cause permanent brain damage for persons who have stopped breathing or whose hearts have stopped pumping. With first aid or emergency assistance within this time frame, more lives can be saved. Shorter response times also prevent continued human injury and property destruction that may occur during a natural or manmade disaster.

### *Fire Hazards*

Extreme risk for wildfire is provided by areas with chaparral vegetation on steep slopes (40 to 50 percent slopes) and where there is limited access for fire control equipment. High risks are posed by grasslands and woodlands with somewhat limited access and by slopes of 20 to 40 percent. Low risks are urban areas where fire access is available and the terrain is relatively flat or up to 20 percent slope. Urban fire hazards are presented by industrial areas, hazardous material users, structures with substandard electrical wiring, high voltage power lines, and high pressure gas lines. Fire can also occur in any part of the City due to carelessness and accidents. In order to facilitate firefighting response, the City should have the following standards for areas with extreme to high risk for fire:

- There should be sufficient access for emergency vehicles and for the evacuation of residents in all areas of the City.
- Adequate access should be provided for all developments.
- All roadways to wildfire areas should be marked and addresses should be posted in plain view.
- Roadways should have adequate width to accommodate emergency vehicles.
- Water supply should be adequate and have sufficient pressure for fire suppression in the event of fire.

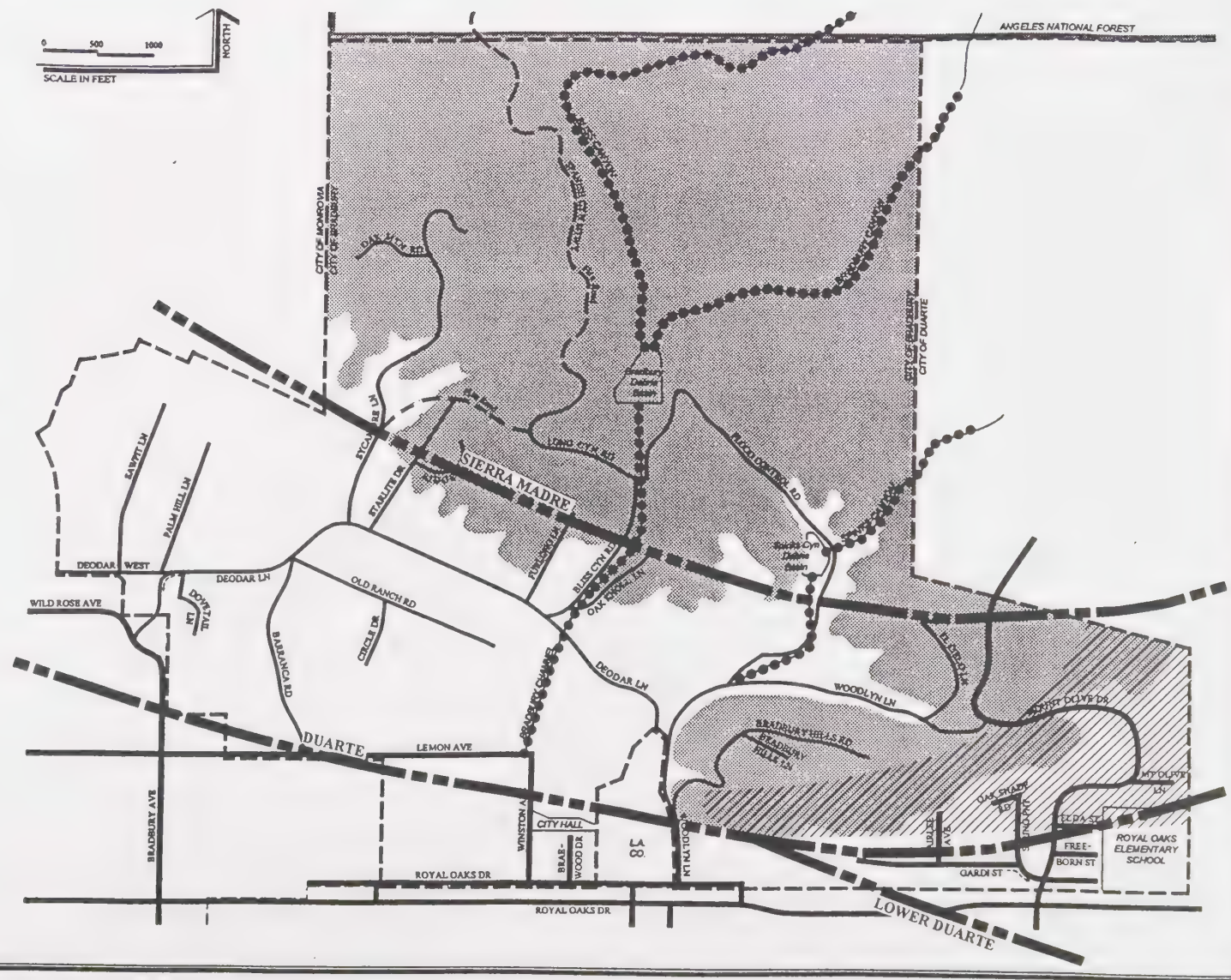


### ***Emergency Preparedness***

Exhibit 6-4 indicates evacuation routes and emergency facilities in the City. The following facilities are noted in Exhibit 6-4 and the following rules apply:

- **Primary Evacuation Routes.** The roads are to be kept open at all times. In the event of temporary closure due to maintenance and/or construction, the fire department is to be notified.
- **Reception Center.** The Royal Oaks Elementary School and the City Hall will serve as centers for disseminating information, collection pints, distribution centers, etc.
- **Local Emergency Operations Center.** The City Hall will serve as the local EOC until which time the County of Los Angeles designates another facility.
- **Critical Facilities.** Certain public facilities require special consideration because of the number of persons in the facility at any one time. Local critical facilities include Royal Oaks Manor, Royal Oaks Elementary School, and Santa Teresita Hospital.









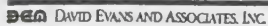


EXHIBIT 6-4





## Noise Element





## SECTION 7: CITY OF BRADBURY NOISE ELEMENT

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### INTRODUCTION TO THE NOISE ELEMENT

The Noise Element of the *Bradbury General Plan* establishes guidelines for controlling noise in the City. The Noise Element examines the characteristics and effects of noise, describes State and federal guidelines relating to noise control, evaluates the existing noise environment, and discusses the future noise environment. The Element also identifies sensitive land uses and noise sources, with the intent of separating these uses.

As mandated by the California Government Code Section 65302(f), the Noise Element follows the guidelines established by the Office of Noise Control of the State Department of Health Services. Pursuant to these requirements, the Noise Element must:

*...indicate noise levels from traffic along major roads and highways. Noise contours are used to illustrate noise levels in areas adjacent to major roadways. The noise contour maps identify existing noise levels in the City and noise levels anticipated from projected traffic volumes.*

The Element provides a framework within which future planning and noise-related decisions will be made and implemented. The Noise Element is closely related to the Circulation, Land Use and Housing Elements of the *Bradbury General Plan* in that development and traffic have a direct bearing on noise in the local environment. The community survey conducted as part of this General Plan Update, found that most residents view the relatively quiet and noise free environment of the City as an important amenity that must be preserved. In response to this desire, the following guiding principal was considered in the preparation of this Element:

*The objective of the Noise Element is to maintain and preserve the existing quiet and noise-free environment in the City.*

The noise mitigation program in the Element explores options for noise abatement and the prevention of noise conflicts, along with noise insulation standards and land use compatibility along major roadways.

### OVERVIEW OF NOISE ELEMENT ISSUES

#### *Characteristics of Noise*

Sound is technically described in terms of loudness (amplitude) and frequency (pitch). The standard unit of measurement for loudness is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Decibels are based on the logarithmic scale, in terms of human response to noise, a sound 10 dBA higher than another is judged to be twice as loud as a 1 dBA noise level; and 20



dBA higher is four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud).

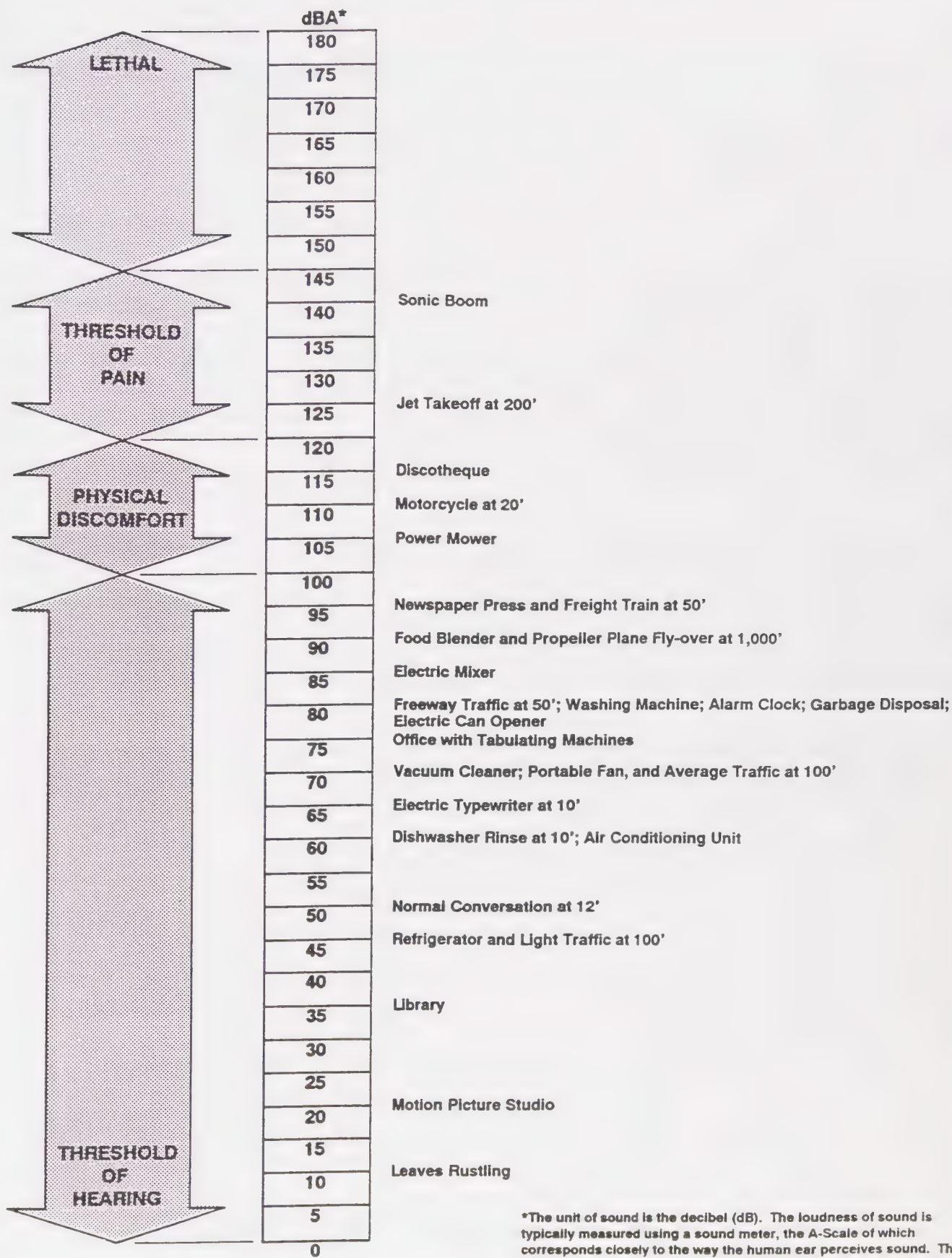
The *single event noise exposure level* (SENEL) is the most appropriate noise level-duration rating scale for a single noise occurrence. The SENEL, given in decibels, is the noise exposure level of a single event measured over the time interval between the initial and final times for which it exceeds the threshold noise level. A single event is a solitary occurrence of noise, such as a train pass-by or an aircraft overflight. Examples of various sound levels due to varying activities are shown in Exhibit 7-1.

Cumulative noise measurements have also been developed to assess community response to noise. They are useful because the scales attempt to include the loudness of each event, the duration of these events, the total number of events, and the time of day these events occur, into one single number rating scale. The predominate cumulative noise measurement scales include the: *equivalent noise level* (Leq) and the *community noise equivalent level* (CNEL). The Leq measure represents the average of the sound level energy for a 1-hour period and employs an A-weighted decibel correction which corresponds to the optimal frequency response of the human ear. CNEL is a 24-hour, time-weighted annual noise level and is a measure of the overall noise experienced during an entire day. The time-weighted average recognizes an individual's increased sensitivity to noise at certain time periods. For example, noise levels during the evening (7 p.m. to 10 p.m.) are penalized by 5 dB and noise at night (10 p.m. to 7 a.m.) is penalized by 10 dB.

Environmental factors such as wind direction and speed, temperature and humidity, the characteristics of the ground surface, the presence of grass, shrubbery, and trees, generally influence the actual loudness of noise. This is particularly true where the view of the roadway is interrupted by isolated buildings, clumps of bushes, scattered trees, or the intervening ground is soft or covered with vegetation, and the source or receiver is located more than three meters above the ground. In an area which is relatively flat and free of barriers, the sound resulting from a single source spreads in a spherical manner away from the source (similar to the way waves are formed after a rock is thrown into a pond) and drops by six decibels for each doubling of distance or 20 decibels for each factor of ten in distance. This applies to fixed noise sources and mobile noise sources which are temporarily stationary, such as an idling truck or other heavy equipment operating within a confined area (such as industrial processes).

### *Characteristics of Traffic Noise*

Generally, it can be shown that a 26 percent increase in the traffic volume will cause a 1.0 dBA increase in adjacent noise levels. Doubling the number of vehicles on a given route increases the adjacent noise levels by 3.0 dBA, but changing the vehicle speed has an even more dramatic effect. Increasing the vehicle speed from 35 to 45 mph raises the adjacent noise levels approximately 2.5 dBA. Reducing vehicle speeds from 35 to 30 mph decreases adjacent noise levels by 1.5 dBA on major roadways, and 1.6 dBA on secondary and collector roadways. A speed



\*The unit of sound is the decibel (dB). The loudness of sound is typically measured using a sound meter, the A-Scale of which corresponds closely to the way the human ear perceives sound. Thus the sound level for noise evaluations is frequently expressed in dBA.





decrease from 40 mph to 35 mph reduces adjacent noise levels by 1.3 dBA on major roadways, and 1.4 dBA on secondary and collector roadways. Consequently, lowering motor vehicle speeds can have a significant positive impact in terms of reducing adjacent noise levels.

### *The Existing Noise Environment in the City*

The City is exclusively zoned for single family residential uses. The average residential lot in the City of Bradbury is substantially larger than single family residential lots in adjacent communities. This difference allows for the buffering of homes from each other and from existing streets. The highest ambient noise level in the community is on Royal Oaks Drive (64 dBA). Noise in this area is attributed to traffic south of the old Pacific Electric right-of-way, which is outside the Bradbury city limits. Two types of noise sources should be considered: stationary and mobile noise sources. Fixed sources of noise in Bradbury include air conditioning units, high level radio, stereo or television usage, power tools, lawnmowers and other gardening equipment, appliances used in the home, and barking dogs.

To assess the existing noise environment, field measurements were taken at six locations in the City (refer to Exhibit 7-1). Two readings were taken at each location, one 10-minute reading and one 1-minute reading. The results of the noise survey are summarized below in Table 7-1. The highest noise levels are expected in the southern area of the City. This is due to the higher density of development and the presence of through traffic in the area. Development in these areas should be subject to detailed noise analysis when there is a potential to exceed acceptable noise levels.

**TABLE 7-1  
EXISTING NOISE MEASUREMENTS**

Site	Location	L <sub>max</sub>	L <sub>10</sub>	L <sub>33</sub>	L <sub>50</sub>	L <sub>90</sub>
1	Lemon Ave. west of Winston Ave.	55	50	50	50	54
2	Deodar Ln. near Sycamore Ln.	52	50	50	50	54
3	Sycamore Ln. near Oak Mtn. Rd.	55	52	50	50	45
4	Royal Oaks Dr. west of Winston Ave.	64	54	50	45	40
5	Mount Olive Dr. northern boundary	61	58	50	50	50
6	Mount Olive Dr. at Gardi St.	62	60	55	50	50

L<sub>max</sub> - the maximum sound level recorded during the noise measurement period.

L<sub>10</sub> - the sound level exceeded 10 percent of the noise measurement period.

L<sub>33</sub> - the sound level exceeded 33 percent of the noise measurement period.

L<sub>50</sub> - the sound level exceeded 50 percent of the noise measurement period.

L<sub>90</sub> - the sound level exceeded 90 percent of the noise measurement period; also considered as the background noise level.

Source: David Evans and Associates. 1993.

*Existing Traffic Noise in the City of Bradbury*

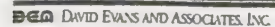
Mobile noise sources are typically transportation-related and include airplanes, helicopters, automobiles, trucks, buses, and motorcycles. These sources are capable of producing loud noise peaks. The City of Bradbury has greater control over its internal environment than do most cities because of the private roads within the City. Controlled access for some areas of Bradbury limits through traffic and its associated noise. Entry to portions of the City is through controlled points which limit traffic to the automobiles of residents, truck traffic for maintenance only, emergency vehicles and construction equipment. The portion of the City developed with public streets is limited to residential uses. Such streets are of a minor or collector nature and do not serve any industrial or commercial areas, resulting in far less noise than would otherwise be experienced in other cities. Thus, noise generated by traffic in the City is minimal by comparison to other communities.

The main source of noise in the City is traffic on roadways. Traffic noise affects noise-sensitive land uses that may be located along and near these routes. Because of the primarily low density residential nature of the City and the presence of many private roads, future development in Bradbury is not expected to result in major increases in traffic volumes and noise along City streets. Increases in traffic volumes on major roadways are expected to come from growth outside the City. This will result in increased noise levels along selected roadways. Table 7-2 presents the results of a noise modelling, as based on future traffic volumes. It indicates the distance from the roadway centerline of the 65, 60 and 55 Db CNEL. Noise contours are shown in Exhibit 7-2.

**TABLE 7-2**  
**EXISTING AND FUTURE ROADWAY NOISE LEVELS (CNEL)**

Roadway Segment	Distance (in feet) from Roadway Centerline to CNEL (Db)				
	65 CNEL	60 CNEL	55 CNEL	CNEL @ 50 Feet	Change in CNEL <sup>1</sup>
Mount Olive Dr. north of Royal Oaks Dr.	0	40	90	55	0
Royal Oaks Dr. west of Woodlyn Ln.	20	45	80	54	0
Deodar Ln. north of Woodlyn Ln.	0	0	40	48	0
Note: <sup>1</sup> Changes in CNEL compared noise levels from existing traffic to projected traffic 50 feet from the roadway centerline. Table 7-4 describes existing noise levels.					
Source: FHWA Noise Prediction Model; David Evans and Associates, 1993.					









### *Noise Sensitive Land Uses*

Land uses in Bradbury and the immediate area considered noise sensitive by the State of California include: schools, hospitals, rest homes, and long-term care and mental care facilities. There are no hospitals, rest homes or long-term medical or mental care facilities within the City of Bradbury. The Royal Oaks Elementary School is located in the southeastern corner of the City. The Royal Oaks Manor retirement home, on Deodar Lane and Royal Oaks Drive, is on county land but is bounded on three sides by the City.

### **NOISE MITIGATION PLAN**

#### *Existing Noise Regulations*

The primary objective of the City of Bradbury Noise Element is to maintain and preserve the existing noise free environment of the City. As indicated previously, the effects of noise can be eliminated or reduced through regulatory noise controls and responsible land use planning. Noise and land use guidelines have been developed by State and federal agencies, including the Federal Highway Administration, the Environmental Protection Agency, the Department of Housing and Urban Development, the American National Standards Institute, and the State of California. These guidelines are presented below:

- **Noise Control Act:** In 1972, the Noise Control Act, authorized the U.S. Environmental Protection Agency (EPA) to publish descriptive data on the effects of noise and establish levels of sound "requisite to protect the public welfare with an adequate margin of safety." These levels are separated into health (hearing loss levels) and welfare (annoyance levels) with an adequate margin of safety. In March 1974, the EPA published *Information on Levels of Environmental Noise Required to Protect Public Health and Welfare with an Adequate Margin of Safety* (EPA 550/9-74-004). According to this publication, 55 dB Ldn is described as the required maximum noise level to provide an adequate margin of safety for areas with outdoor uses including residences and recreational areas. The EPA report does not establish standards, specifications or regulations, but identifies safe levels of environmental noise exposure without consideration for economic cost to achieve these levels.
- **Federal Highway Administration (FHWA).** The FHWA has adopted and published noise abatement criteria for federally-funded highway construction projects. The FHWA noise abatement criteria, basically, establishes an exterior noise goal of 67 dB Leq for residential land uses and an interior goal of 52 dB Leq for residences. The noise abatement criteria applies to private yard areas and assumes that typical wood frame homes with open windows can achieve a 10 dB noise reduction when windows are closed.

- ***Occupational Safety and Health Act (OSHA).*** A number of federal agencies have adopted standards and recommended noise criteria to protect people in both working and home environments. In 1969 and 1970, the Department of Labor established occupational noise regulations through the Walsh Healey Public Contracts Act and set standards for noise exposure for all businesses engaged in interstate commerce through the Occupational Safety and Health Act (OSHA).
- ***Department of Housing and Urban Development (HUD):*** The Department of Housing and Urban Development (HUD) has adopted environmental criteria and standards for determining project acceptability and necessary mitigation measures to ensure that projects assisted by HUD provide a suitable living environment. The standards include noise limits of 65 dB Ldn for residential areas.
- ***California Streets and Highways Code.*** Division 1, Chapter 1, Article 6 of this Code requires State funded noise abatement programs for freeway construction or use which will result in noise levels exceeding 55 dBA L<sub>10</sub> or 52 dBA Leq at existing classrooms, libraries, multi-purpose rooms, and pupil personnel services of public and private elementary and secondary schools. The noise abatement program may include acoustical treatment, elimination of windows, air conditioning, sound buffer structures and other mitigation measures.
- ***Sound Transmission Control Standards*** in the California Administrative Code, Title 24, Building Standards, Chapter 2.5 outline noise insulation performance standards for new hotels, motels, apartment houses, and dwellings other than detached single-family units. It requires an interior noise level of 45 dB CNEL or less for residential projects. For projects near noise sources (airport, major roads, and industrial areas), an acoustical analysis must be made to show compliance with the standards.
- ***California Motor Vehicle Code:*** The State of California has adopted noise standards for areas not regulated by the federal government. State standards regulate noise levels of motor vehicles and motor boats, establish noise impact boundaries around airports, regulate freeway noise affecting classrooms, sound transmission control, occupational noise control, and identify noise insulation standards. The California Motor Vehicle Code sets operational noise limits according to the type of vehicle and date of manufacture.
- ***California Occupational Noise Control Standards:*** The California Code of Regulations, Title 8, Industrial Relations, Chapter 4, as revised and effective September 28, 1984, outlines permissible noise exposure at a work place.
- ***State Office of Noise Control.*** This office has prepared *Guidelines for the Preparation and Content of Noise Elements of the General Plans*. This provides a guide for land



use compatibility of noise sensitive land uses in areas subject to noise levels of 55 to 80 dB CNEL or Ldn. Residential uses are normally unacceptable in areas exceeding 70 dB CNEL and conditionally acceptable between 55 and 70 dB CNEL for low density single family, duplex, mobile homes, and between 60 and 70 Db CNEL for multi-family units. Schools, libraries, hospitals, and nursing homes are treated as noise sensitive land uses requiring acoustical studies within areas exceeding 60 dB CNEL. Commercial/professional office buildings and industrial land uses are normally unacceptable in areas exceeding 75 dB CNEL but are conditionally acceptable within 67 to 78 dB CNEL (for commercial/professional offices) and 70 to 80 dB CNEL (for industrial land uses). Golf courses are normally unacceptable in areas exceeding 70 dB CNEL. However, the State stresses that these guidelines can be modified to reflect community sensitivities to noise. Exhibit 7-3 shows noise compatibility for various land uses.

### *City of Bradbury Noise Control Measures and Standards*

The City's Noise Control Ordinance provides a means to enforce the existing quiet, noise-free environment. The City will continue to:

- Incorporate measures into future residential projects which attenuate exterior noise levels in outdoor activity areas to a maximum of 65 CNEL.
- Ensure through the design review process that schools are located and designed so that exterior noise exposures do not exceed 65 CNEL and interior peak noise levels do not exceed 60 dBA as a result of exterior noise sources.
- Enforce State vehicle noise regulations (Section 23130, 23130.5, 27150, 27151 and 38275 of the California Vehicle Code) to curtail the use of vehicles equipped with illegal or faulty exhaust systems and "hot rods" exhibiting tire squeal or excessive exhaust noise.
- Enforce the California Noise Insulation Standards (Title 24 California Code of Regulations) for multi-family dwellings to ensure an acceptable maximum interior noise level of 45 CNEL in habitable rooms, and maintain adequate noise insulation.
- Acoustical privacy, consistent with the California Noise Insulation Standards and all existing and future requirements outlined in the State Housing Code, shall be strictly enforced for both single and multiple family residential construction.
- No roosters or peacocks are permitted in the City.

Acceptable noise levels have been established for the different land use designations in the City. The established levels are based on existing noise levels obtained through field monitoring, projected noise levels, and community expectations to maintain an environment that is free from unnecessary, excessive and annoying noise. Exhibit 7-3 indicates the acceptable noise levels at the property line for each category of land use.

#### *The Noise Element's Relationship to Land Use Policy*

The Land Use Plan for the City of Bradbury shows that the City will remain primarily residential in development. This land use is not expected to result in any significant increases in local traffic. Thus, future development under the Plan is not likely to result in any significant changes in the ambient noise levels of the community. Residential development is a noise sensitive use. Any development along major roadways in the City shall be subject to noise evaluation to determine the need for specific noise control measures, in order to achieve an acceptable noise environment. Land uses and activities which may generate excessive noise shall also be regulated to prevent any adverse effect on City residents.

#### *Future Noise Environment*

The main source of noise in the City is traffic on roadways. Traffic noise affects noise-sensitive land uses that may be located along and near these routes. Because of the primarily low density residential nature of the City and the presence of many private roads, future development in Bradbury is not expected to result in major increases in traffic volumes and noise along City streets. Increases in traffic volumes on major roadways are expected to come from growth outside the City. This will result in increased noise levels along selected roadways. However, an 18 percent increase under worst case conditions for the collector roads (Royal Oaks Drive and Mount Olive Drive) will not result in a perceptible change in noise levels.



LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE L <sub>dn</sub> OR CNEL, dB					
	55	60	65	70	75	80
RESIDENTIAL-LOW DENSITY SINGLE FAMILY, DUPLEX MOBILE HOMES	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
RESIDENTIAL- MULTI FAMILY	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
TRANSIENT LODGING- MOTELS, HOTELS	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
SCHOOLS, LIBRARIES CHURCHES, HOSPITALS, NURSING HOMES	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
AUDITORIUMS, CONCERT HALLS, AMPITHEATRES	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
SPORTS ARENA, OUTDOOR SPECTATOR SPORTS	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
PLAYGROUNDS, NEIGHBORHOOD PARKS	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
GOLF COURSES, RIDING STABLES, WATER RECREATION, CEMETERIES	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
OFFICE BUILDINGS, BUSINESS, COMMERCIAL AND PROFESSIONAL	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
INDUSTRIAL, MANUFACTURING, UTILITIES, AGRICULTURE	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX

## LEGEND



### NORMALLY ACCEPTABLE

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.



### CONDITIONALLY ACCEPTABLE

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.



### NORMALLY UNACCEPTABLE

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.



### CLEARLY UNACCEPTABLE

New construction or development should generally not be undertaken.

## CONSIDERATIONS IN DETERMINATION OF NOISE-COMPATIBLE LAND USE

### A. NORMALIZED NOISE EXPOSURE DESIRED

Where sufficient data exists, evaluate land use suitability with respect to a "normalized" value of CNEL or L<sub>dn</sub>. Normalized values are obtained by adding or subtracting the constants described in Table 1 to the measured or calculated value of CNEL or L<sub>dn</sub>.

### B. NOISE SOURCE CHARACTERISTICS

The land use-noise compatibility recommendations should be viewed in relation to the specific source of the noise. For example, aircraft and railroad noise is normally made up of higher single noise events than auto traffic but occurs less frequently. Therefore, different sources yielding the same composite noise exposure do not necessarily create the same noise environment. The State Aeronautics Act uses 65dB CNEL as the criterion which airports must eventually meet to protect existing residential communities from unacceptable exposure to aircraft noise. In order to facilitate the purposes of the Act, one of which is to encourage land uses compatible with the 65dB CNEL criterion wherever possible and in order to facilitate the ability of airports to comply with the Act, residential uses located in Community Noise Exposure Areas greater than 65dB should be discouraged and considered located within normally unacceptable areas.

### C. SUITABLE INTERIOR ENVIRONMENTS

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater than 45 dB CNEL of L<sub>dn</sub>. This requirement, coupled with the measured or calculated noise reduction performance of the type of structure under consideration, should govern the minimum acceptable distance to a noise source.

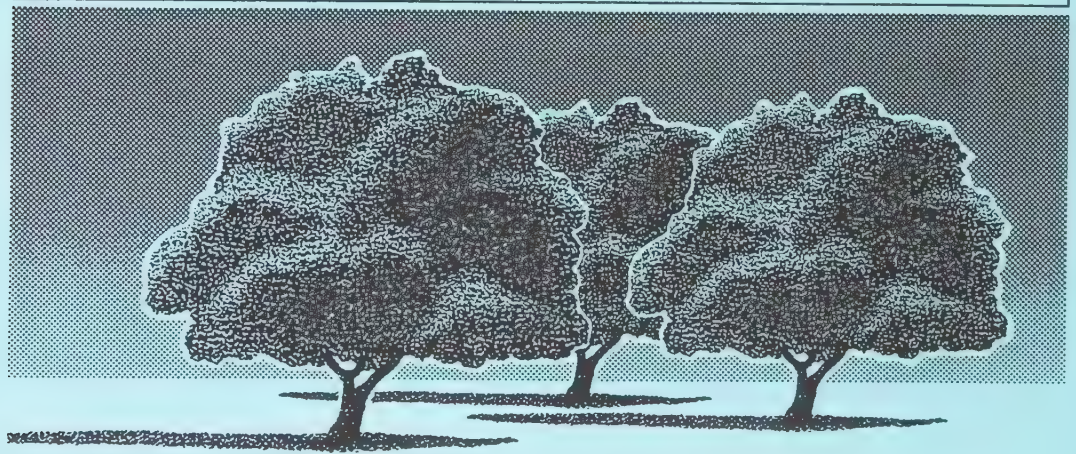
### D. ACCEPTABLE OUTDOOR ENVIRONMENTS

Another consideration, which in some communities is an overriding factor, is the desire for an acceptable outdoor noise environment. When this is the case, more restrictive standards for land use compatibility, typically below the maximum considered "normally acceptable" for that land use category, may be appropriate.





## Circulation Element







## SECTION 8: CITY OF BRADBURY CIRCULATION ELEMENT

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### INTRODUCTION TO THE CIRCULATION ELEMENT

The Circulation Element of the City of Bradbury General Plan identifies the existing and future roadways that will serve the City. Bradbury is and will continue to remain a small residential community. The Circulation Plan contained in this element, is a reflection of the community's desire to retain its rural, residential character. Government Code Section 65302(b) states that Circulation Elements must:

*...indicate the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, other public utilities and facilities, all correlated with the land use element of the General Plan.*

The State requirements call for the Circulation Element to coordinate the transportation and circulation system with planned land uses; promote the safe and efficient transport of persons and goods; make efficient use of existing transportation facilities; and to protect environmental quality.

The primary objective of the City of Bradbury Circulation Element is to accommodate existing and future traffic (equestrians, pedestrians, and vehicles) in a manner that is both safe and sensitive to the City's unique character. The following guiding principal serves as the Circulation Element's foundation:

*All public and private roadways and roadway improvements in the City will be constructed in a manner that preserves the City's rural, residential character.*

The Circulation Element contains programs and standards applicable to all roadways in the City while fulfilling the guiding principals outlined in the General Plan calling for the preservation of the City's existing character.

### OVERVIEW OF CIRCULATION ELEMENT ISSUES

#### *Description of Existing Roadways in the City*

The City is unique in a number of ways and these unique qualities must be considered in formulating a circulation plan and in developing and standards for roadways in the City:

- The City is relatively small in terms of both area (1.99 square miles) and population (850 residents);
- Land uses in the City are exclusively residential and this residential development is entirely single-family detached housing. Limited growth is anticipated in the future due to the lack of available land and other environmental constraints.

- There are no signalized intersection controls in the City. Intersection control is limited to stop signs.
- Access to the City is limited to local roads in neighboring Monrovia and Duarte. These access roads have limited capacity to accommodate increased traffic volumes.

The principal regional access to the City of Bradbury is provided by two nearby freeways: the San Gabriel River Freeway (Interstate Route 605) and the Foothill Freeway (Interstate Route 210). Nearest freeway access to the City includes the Mount Olive/Huntington Drive ramps at the I-57/I-210 freeway interchange. Vehicles exiting at this location can continue northbound on Mount Olive Drive on into Bradbury. Additional nearby freeway access is provided by the Buena Vista Street and Mountain offramps on the I-210 freeway.

The principal east-west major roadway that serves the City of Bradbury is Huntington Drive located in the City of Duarte, one-quarter mile to the south. Huntington Drive is a fully improved four-lane highway with a raised, landscaped median and separate left-turn lanes. This highway has an interconnected system of traffic signals which provides and maintains an efficient and reasonable flow of traffic. Royal Oaks Drive, an east-west secondary highway, is located at the City's southerly boundary. Other important north-south roadways providing access to the City include Buena Vista Street and Mount Olive Drive. Roadways inside the City are limited to two travel lanes and are designed to provide direct access to individual properties. The roadway locations are generally dictated by topography with linear east/west or north/south trending roads limited to the extreme southern portions of the City.

### *Issues and Opportunities*

Residents were asked a number of questions related to traffic and circulation in the City (refer to *Section 1: Introduction to the General Plan*) and the community's responses were important to considerations in formulating the Circulation Plan:

- Little traffic on the City's roadways was one of the major advantages to living in the City according to residents.
- When asked if the existing street widths were satisfactory, 90% of the respondents indicated they were satisfied with the widths of the existing roadways.
- Residents were asked if the existing streets within the City were satisfactory in terms of quality of pavement. Approximately 83% indicated the quality of the roadways were satisfactory.



- When asked if the public streets should have sidewalks, over 85% of the respondents indicated they did not feel sidewalks were appropriate for local streets in the City.
- The majority of the respondents (64%) did not wish to see the development of a equestrian trails system.
- The majority of the respondents (72%) did not wish to see the City develop a pedestrian trail system.

### *Existing Traffic in the City of Bradbury*

As indicated previously, land uses in the City are almost exclusively residential (exceptions include City Hall and Royal Oaks Elementary School). Furthermore, the residential land uses are lower density, single family detached units. Traffic generation is related to a number of variables which include type of land use, size, number of employees, etc. The Institute of Transportation Engineers (ITE) has studied traffic generation from various land uses and, from these observations, has derived factors that can be used to project future traffic.

According to the ITE rates, single-family residential units will generate 10 two way trips (or round trips) daily. Taking these rates and assigning them to the 281 units that are currently found in the City, a total of 2,703 vehicle trips are generated daily during each weekday. Of this total, 209 trips are generated during the morning peak hour (the peak hour refers to the period when traffic generation is the greatest) and 286 trips are generated during the evening peak hour. The total daily traffic generation on Saturdays is 2,884 trips and, of this figure, 274 trips are peak hour trips.

The ability of a roadway to accommodate traffic is expressed in terms of *level of service* (LOS) which is typically measured at critical locations. Levels of Service range from "A" (representing free-flow conditions) through "F" (representing extreme congestion). Exhibit 8-1 illustrates the LOS concept. The LOS of a given roadway is derived by examining the roadway's capacity and the actual traffic volumes the roadway is currently handling. For example, the typical capacity of a two lane *local* street is 1,100 vehicles during the peak hour periods and the daily capacity is 14,000 vehicles. If the roadway is currently handling 10,000 vehicle trips on a daily basis, the resulting volume to capacity ratio is 10,000 to 14,000 (or 0.71 which is derived by dividing the existing volumes-10,000 daily trips by the roadway's capacity-14,000 daily trips). The resulting volume to capacity ratio, or V/C ratio, of 0.71 translates into a Level of Service of C in the example. As indicated in Exhibit 8-1, a LOS C represents a traffic condition of acceptable traffic flow.

As indicated previously, existing residential development in the City generates approximately 2,700 trips during the weekdays. All of this traffic is distributed over all of the roadways in the City though most vehicles must use Mount Olive Drive, Deodar Lane, Woodlyn Lane, Lemon Avenue,



Winston Avenue, or Royal Oaks Drive for trips outside the City. Only Royal Oaks Drive and Mount Olive Drive carries through traffic from areas outside the City of Bradbury. The majority of the roads in the City are operating at an LOS of A because of the low traffic volumes.

During 1992, there was one injury accident, involving one person, and only one report of property damage. The total number of reported accidents Citywide was three. The Sheriff's Department issued only one citation for speeding, but issued 62 citations for other moving violation hazards.

Parking facilities include both on-street parking and on site parking facilities in Bradbury. Adequate parking is provided in accordance with the parking regulations in the City's Zoning Code (Chapter 7, Section 9310). Parking is presently not a problem within the City, and is not expected to be a problem in the future.

### *Alternative Forms of Transportation*

The City of Bradbury does not maintain any fixed transit routes within the City. Fixed route transit is provided by the Metropolitan Transit Authority, through connections in the City of Duarte. Bicycle riding is permitted and encouraged on City streets. Some elementary students ride their bicycles to school. Regional bicycle and pedestrian travel routes exist on the Duarte Bikeway and the San Gabriel River Trail. The Duarte Bikeway is located along the railroad right-of-way between Buena Vista Street and Los Lomas Drive. The San Gabriel River Trail extends from Azusa to Seal Beach. No freight or passenger rail service is available within the City of Bradbury. The closest railroad facility is the AT&SF tracks and right-of-way located one mile southerly of the City of Bradbury.

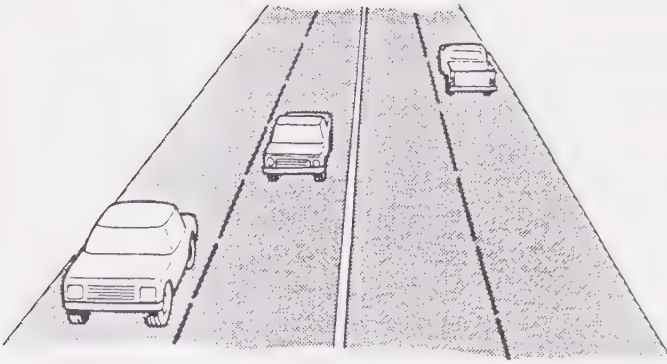
## **CIRCULATION PLAN**

During the next 20 years, the City of Bradbury will experience only minor growth and development. As a result, no substantial alterations to the existing circulation and roadway system are anticipated. The focus of the Circulation Plan is to preserve the existing roadway system so as to retain the existing rural residential character of the City. As indicated in the Introduction to the Circulation Element, the City of Bradbury is unique in a number of respects and these unique traits are reflected in the City's Circulation Plan.

### *Standards for Roadways and Facilities*

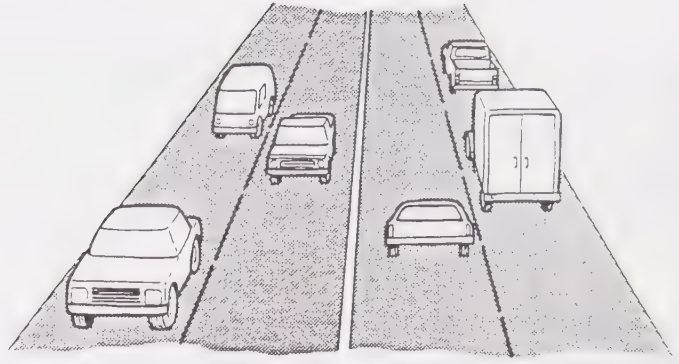
The Circulation Plan (illustrated in Exhibit 8-2), indicates the location and extent of streets and roadways in the City. The roadway classification system described in the standards that follow are unique to the City of Bradbury and consist of the following categories:

- **Collector Streets.** The function of this category of road is to carry or *collect* vehicles from the local streets to major arterial roadways. Collector roads in the City of



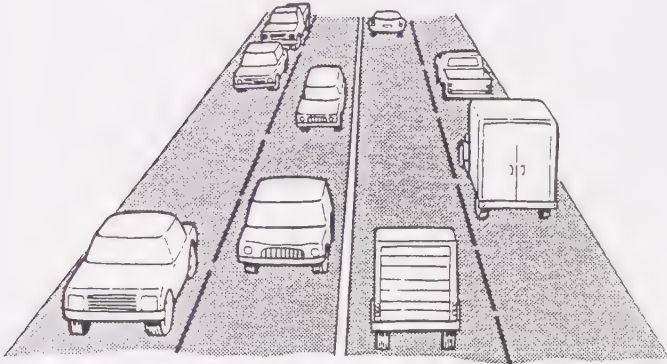
### Level of Service A

Free flow in which there is little or no restriction on speed or maneuverability.



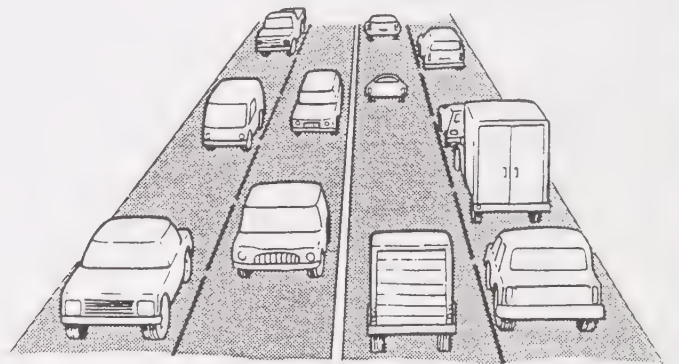
### Level of Service B

Stable flow though operating speed is beginning to be restricted by other traffic.



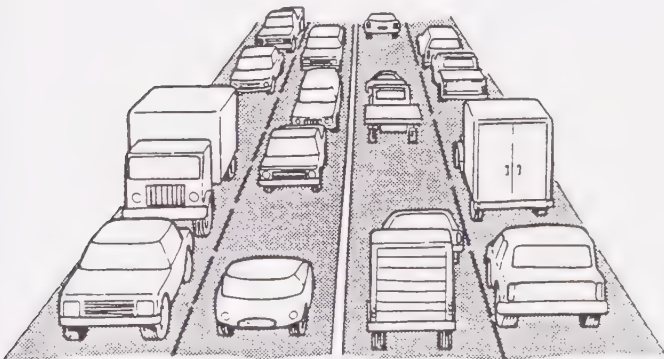
### Level of Service C

Stable flow though drivers are becoming restricted in their freedom to select speed, change lanes or pass.



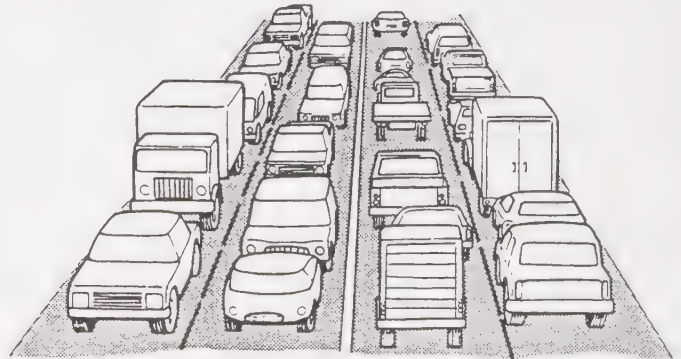
### Level of Service D

Tolerable average operating speeds are maintained but are subject to considerable sudden variation.



### Level of Service E

Speeds and flow rates fluctuate and there is little independence on speed selection or ability to maneuver.



### Level of Service F

Speeds and flow rates are below those attained in Level of Service E and may, for short time periods, drop to zero.





Bradbury have a typical pavement width of 35 to 40 feet and contain two travel lanes (one lane in each direction). On street parking is generally not permitted. Roadways classified as Collector Streets include Mount Olive Drive and Royal Oaks Drive.

- **Local Public Streets.** This category of roadway provides direct access to individual parcels in the City and has nonrestricted access. This type of roadway may have up to 35 to 40 feet in width as measured from curb-to-curb and typically contains two travel lanes. On-street parking may be permitted on some local streets where there is adequate width. Streets included in this category include Mount Olive Lane, Elda Street, Freeborn Street, Oak Shade Road, Spring Point, Gardi Street, Fairlee Avenue, Woodlyn Lane (the southernmost portion only), Braewood Drive, Winston Avenue, and Lemon Avenue.
- **Local Non-public Streets.** This category of roadway also provides direct access to individual parcels in the City. This type of roadway is a private street and access to the roadway is controlled. This type of roadway may contain a single travel lane. On street parking may be permitted on some local streets. Those local streets not mentioned previously fall into this category.
- **Fire/Utility Roads.** This type of roadway is typically unimproved (non-paved). Roadways in this classification may have varying widths and may be able to accommodate a single lane though the maximum lane width is two lanes. Roadways included in this category include the Spanish Canyon fire road and the flood control road between the Bradbury Debris Basin and the Spinks Canyon Debris Basin.
- **Pedestrian/Bicycle Trails.** This category of applies to the existing bicycle/pedestrian trail located south of Royal Oaks Drive. This existing trail is a *Class 3* trail in that it is paved and separated from the roadway.

Exhibit 8-2 illustrates the Master Plan of Roadways and Exhibit 8-3 illustrates roadway standards for local streets.

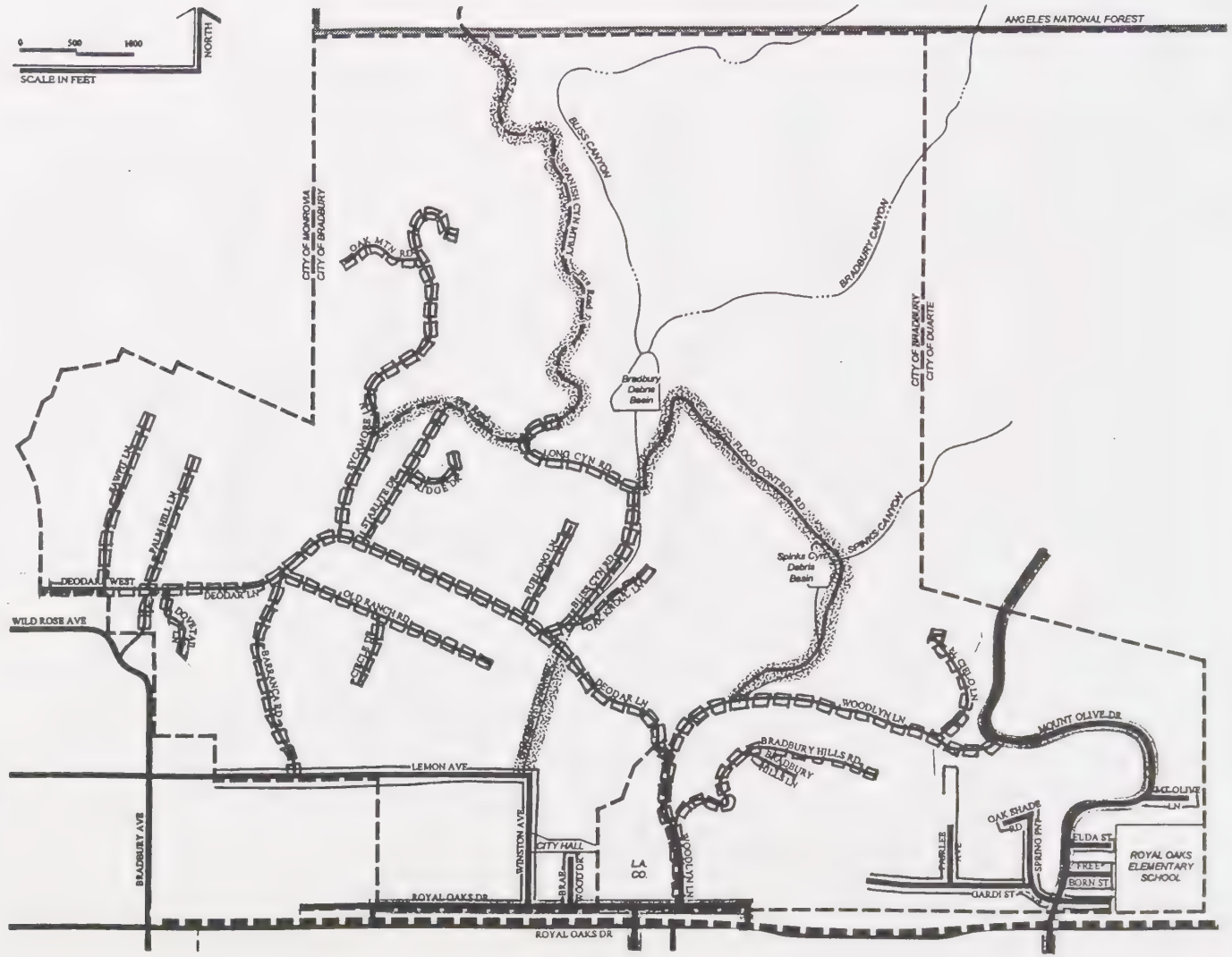
In addition to the development standards associated with the various categories of roads, the following additional standards apply to roadways in the City of Bradbury:

- Local streets that are privately owned must be developed to the specifications required for public roadways.

- Street lighting, when required along collector roads and local streets, must be shielded or consist of lighting fixtures that reduce the amount of glare and spillover lighting.
- Local streets will be constructed and/or maintained in a manner consistent with the City's rural character in terms of signage, landscaping, and right-of-way improvements.

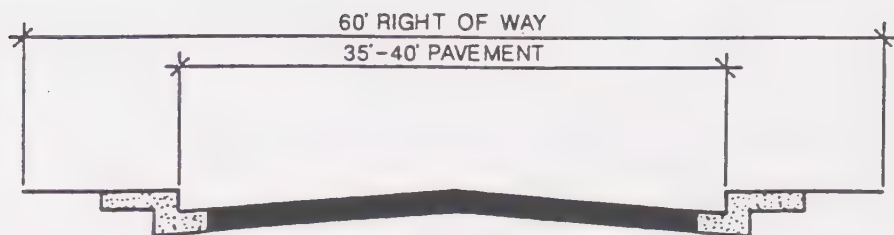
*The Circulation Element's Relationship to Land Use Policy*

Future traffic will not increase significantly over the next 20 years. Under theoretical buildout, only about 50 new homes will be constructed Citywide. This new housing will translate into approximately 500 additional vehicle trips. This represents an increase of about 18% over the existing traffic volumes. The majority of this additional traffic will occur on collector roads.

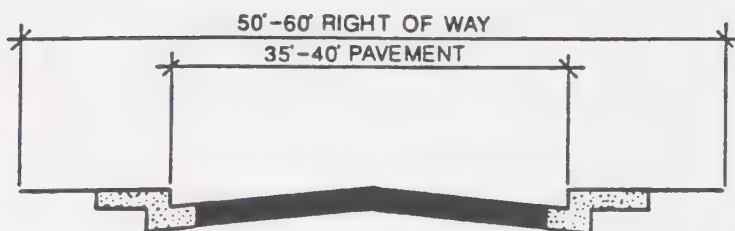








COLLECTOR STREETS



LOCAL PUBLIC STREETS





## LIST OF PREPARERS

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Portions of the Introduction (Section 1) was authored by Mr. Lew Pearce, a long time resident of the area. Mr. Pearce wrote the majority of the *Background of Planning* included in the Introduction

### CONSULTANT TO THE ENVIRONMENTAL ASSESSMENT

David Evans and Associates, Inc.  
1000 East Garvey Avenue South, Suite 250  
West Covina, California 91790  
(818) 919-6400

Marc Blodgett	Project Manager
Nancy Hutar	Assistant Project Manager
Josephine Alido	Project Planner
J.C. Rothschild	Project Planner
Judy Krause	Word Processor
Robert Campbell	Graphics
Sean Clancey	Computer Mapping

In addition, portions of the reference material included in the General Plan was provided by:

Lockman and Associates  
249 East Pomona Boulevard  
Monterey Park, California 91754



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